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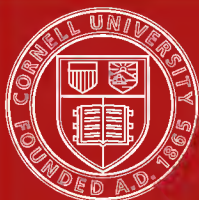
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SUPERVISED STUDY



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SUPERVISED STUDY

A DISCUSSION OF THE STUDY LESSON
IN HIGH SCHOOL

BY

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New York

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L. L.

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To

MY MOTHER

WHO WAS MY FIRST TEACHER AND WHO
IN COUNTLESS WAYS HAS BEEN
A SOURCE OF INSPIRATION

PREFACE

INTEREST in supervised study has become so general within the last few years that the time seems ripe for the appearance of a discussion that seeks to define this new method of teaching. The following chapters aim (1) to formulate a tentative conception of supervised study; (2) to indicate what should be included in a course on teaching the high school pupil how to study; (3) to describe in detail the various schemes of organization by which the supervision of study is administered in a large number of schools; (4) to apply the principles and methods of supervised study to some of the subjects in the high school program; (5) to summarize the results of the more significant investigations aiming to prove the effectiveness of supervised study; (6) to collect the data on supervised study that have appeared in several periodicals within the last five years and which may not have been accessible to the majority of teachers.

I have sought to avoid theory as much as possible. Wherever theoretical discussions are introduced I have been guided by observations made in a number of high schools where this method is well established. The book aims to be practical. It is a reflection of things as they now are. It may seem to many teachers that some of the discussions are really treatments of the well-known recitation. My belief is that a coöperative recitation does employ many of the principles

of supervised study, and that for this reason any discussion of the study period as viewed in this book would necessarily include the recitation lesson. It should be noted, however, throughout the book that supervised study is interpreted to mean that method of instruction by means of which the teacher so presents the subject matter in hand that every pupil is given an adequate opportunity to understand and master the various problems.

Supervised study, I hold, is concerned not so much with hearing lessons as with learning lessons. The teacher who is trying to teach her pupils how to study is not interested in memory feats. Recitation periods we must have, of course, for reviews are essential and summaries are indispensable. But with a thoroughly organized supervision of study the teacher will find less need of the old-time recitation. She will find in the study-period ample ground for class marks.

From one angle, supervised study is simply an elaborate and coöperative assignment. The next lesson is made so clear and so much time is given each pupil to grasp its details that every one has a maximum chance to learn the lesson. This is fair to the pupil. Nothing is gained by an austere and autocratic attitude on the part of the teacher. Knowledge is not esoteric or aristocratic. It belongs to everybody and every one ought to have an opportunity to get as much of it as possible. Teaching is not telling or testing; it is guiding and helping others to get knowledge.

Obviously, I am indebted to a large number of schoolmen who have generously rendered me invaluable service in many forms specifically indicated in the various chapters. I am especially indebted to Dr. Charles Hughes Johnston of the University of Illinois from whom I first received the suggestion to make the field of study one of prolonged investiga-

tion, and from whom I have received, in a bewildering number of ways, inspiration and guidance. To Dr. W. C. Bagley I am indebted for many suggestions regarding the organization of the material throughout the book, and for encouraging stimulus to offer teachers a discussion of this method. I wish to acknowledge also my gratitude to Dr. J. Stanley Brown, of Joliet, Ill.; Mr. F. M. Giles, of DeKalb, Ill.; Dr. J. L. Merriam, of the University of Missouri; Mr. G. E. Rickard, of Oakland City, Ind.; Mr. L. I. Loveland, Principal of High School in Pottstown, Pa.; and Supt. E. E. Smith, of Richmond, Va., for the many data they gave me, which I have used in a variety of ways throughout the book. The authors and close readers will recognize also my frequent reference to *The Psychology of High School Subjects* by Charles H. Judd and to *Methods of Teaching in High Schools* by S. C. Parker.

A. L. H.

UNIVERSITY OF VIRGINIA,
December 22, 1915.

TABLE OF CONTENTS

PART I

GENERAL PRINCIPLES AND METHODS

CHAPTER	PAGES
I. THE PRESENT DEMAND FOR SUPERVISED STUDY	1-15
I. The interchanging influence of society and the school. II. Present conditions of society affecting the school. 1. The family—modified in four respects: <i>a.</i> Biological. <i>b.</i> Architectural. <i>c.</i> Industrial. <i>d.</i> Social. 2. The modern program of studies. 3. The modern emphasis on industrial differences. Summary.	
II. THE CONCEPTION OF SUPERVISED STUDY	16-30
I. Supervised Study a new term. II. Misconceptions of Supervised Study. III. Various analyses of Supervised Study. IV. The fourfold application of Supervised Study. 1. A new type of class management. 2. A change of accent in methods of teaching. 3. Discriminate organization. 4. School administration. <i>a.</i> Less home study. <i>b.</i> Longer school day. <i>c.</i> A new type of teacher. <i>d.</i> Better proportioned expenditure of money. V. The meaning of Supervised Study.	
III. INDIVIDUAL DIFFERENCES	31-61
I. The transition from class to individual instruction. II. What is meant by individual differences. III. Differences in individual abilities. 1. Differences in rate and amount of work. 2. Differences of ability according to subject. <i>a.</i> An experiment in correlation. <i>b.</i> A pupil "born short." 3. Differences in ability ac-	

CHAPTER

PAGES

cording to sex. *a.* Pyle's curve. *b.* Monroe's data. *c.* Minnick's data. *d.* Frailey-Crain data. General Conclusion. IV. Individual differences in image types. Chancellor's investigation. No pure mental types. Thorndike's criticism of "Image type" doctrine. Summary. V. Differences of character and disposition. 1. An Illinois scheme. 2. Pyle's record sheet. 3. Bagley's classification of troublesome cases. 4. A tentative analysis of high school pupils' dispositions as related to studying. 5. The Detroit system of records. General Summary.

IV. PROPER CONDITIONS OF AND HINDRANCES TO STUDYING . . . 62-93

I. The significance of favorable conditions. II. Conditions of studying classified. 1. Physiological conditions, including health. *a.* What health means. (1) Food, its quality and amount, time of eating. (2) Sleep—the bedchamber. (3) Recreation. 2. Physical conditions. *a.* Light—quality, amount, blackboards. *b.* Heat—kinds. *c.* Ventilation—methods. *d.* Appearance of pupil's study hall at home and at school. 3. Psychological conditions. *a.* Attention—posture, quick start, time limit, interest in subject, rapid reading, variety of appeal. *b.* Feeling tone—success produces a pleasant feeling; confidence in one's knowledge of fundamentals leads to forceful satisfaction; moods are the emotional climate that exhilarate or depress the pupil at work; the clash between self-preservative and social instincts including a study of the pupil's appearance and popularity; weather and climate. *c.* Distractions—distribution of. Fatigue. General Summary.

V. THE ORGANIZATION OF SUPERVISED STUDY . . . 94-126

I. Inevitable variety of organizations. Classification of methods. II. General plans. 1. General Assembly Hall. *a.* Criticism. 2. The conference plans. Stated conference, appointments. (1) Technic of conference hour. (2) Benefits of conferences. 3. Study coach. *a.* Unassigned teacher. (1) Technic of the unassigned teacher. *b.* The study coach; unassigned teacher;

(1) Technic of study coach. (2) Summary. 4. The "Delayed Group" plan. 5. General directions in studying. *a.* Home study program. *b.* Giles' scheme. *c.* University of Chicago plan. *d.* Twin Falls, Id., study outline. General Summary.

VI. THE ORGANIZATION OF SUPERVISED STUDY (*Continued*) . . . 127-160

The importance of specific directions in study. III. Subject organizations. 1. Divided periods. *a.* The Newark plan. *b.* Columbia, Mo., plan — organization of; the Merriam directions. 2. The double period in Joliet, Ill. *a.* Description of, by Dr. Brown. *b.* General technic. (1) The teacher's preparations. (2) Assignments. (3) Supervising the pupils at work. 3. Weekly supervised study. 4. Daily — extra period. 5. Alternate daily periods. 6. Richmond plan. 7. Occasional supervision. General Summary.

VII. METHODS OF STUDYING 161-194

I. Investigations of the study of high school pupils. *A.* Time of day preferred. *B.* Studying alone. *C.* Amount of time spent in studying. II. Methods of work. 1. The use of the textbook. *a.* Underscoring. (1) Notice signs. *b.* Summarizing. (1) Means of training pupils to summarize. *c.* The use of the margin. *d.* Inserted leaves. *D.* Pupils' comments on their methods of studying. 2. Reference books, including dictionaries, encyclopedias, and magazines. 3. Outlines. *a.* Structure of outlines. *b.* Forms of outlines: (1) Vertical or serial. (2) Oblique. (3) Parallel. (4) Brace or Horizontal. (5) Interlacing. 4. Notebooks. *a.* Kinds: (1) Loose-leaf. (2) Cards. (3) Manila folders and filing cases. *b.* How to keep notebooks. (1) How to take notes. (2) The appearance of the notebook. *E.* Pupils' comments on their methods of studying. Summary.

VIII. METHODS OF STUDYING (*Continued*) 195-220

5. Reports, special papers, etc. *a.* How to prepare for writing reports. *b.* The appearance of the finished report. 6. Supplementary reading. *a.* How to pre-

serve what is read. *b.* How to read rapidly. *c.* How to copy material in notebooks. 7. How to prepare for examinations. *a.* The use and abuse of cramming. *b.* The best way to study for examinations. 8. How to memorize. Methods — clear first impression, associations, personal experience, supplementary reading, whole method, mnemonic devices, recall, studying aloud. 9. Thinking. *a.* The thinking process. *b.* Thinking depends upon first impressions, organization, etc. 10. Application. General Summary.

PART II

SPECIAL METHODS OF SUPERVISING THE STUDY OF VARIOUS SUBJECTS

IX. SUPERVISING THE STUDY OF ENGLISH 221-251

I. Grammar. 1. How to study grammar. *a.* Formally. *b.* Incidentally and at home. II. Composition. *A.* Written composition. 1. Studying theme writing. *a.* Habits of writing are specific, not general. *b.* Fluency and forcefulness of expression depend upon having something to say. *c.* Coherence and balanced expression are determined by habits of correct thinking. *d.* Interest in themes for their own sake will vitalize the pupil's work. 2. Diversified forms of written composition. *a.* How to study narration. *b.* Description. *c.* Exposition. *d.* Argumentation. 3. Supervising the written composition work. *a.* A minimum amount of written work. *b.* "Editing to kill" and the "tragedy of red ink." *c.* Reading best compositions before the class. *d.* A standing assignment. *e.* To develop style requires many years. *f.* Mistakes calling for special attention. *g.* Spelling. *B.* Oral composition. 1. How to study oral composition. *a.* Conversation and discussion require (1) broad general knowledge, (2) special knowledge, (3) good listening, (4) beginning and closing a conversation, (5) attitude in conversation, (6) voice

Table of Contents

XV

CHAPTER

PAGES

in conversation, (7) read conversations. *b.* Public speaking. (1) After-dinner speaking. (2) Addresses — gestures, how to prepare and use notes in public speaking. *c.* Debating. *d.* Artistic reading — program making. General Summary.

X. SUPERVISING THE STUDY OF HISTORY 252-275

I. The teacher's aim. 1. Pupils' reasons for disliking history. 2. A new point of view needed. 3. Educational value of history. II. Aims and corresponding general methods. III. How pupils study history. 1. Johnson's investigation. 2. Rickard's study. IV. Supervising the studying of history. 1. Rickard's analysis of mental processes in the studying of history. 2. The dictionary habit. 3. Cultivation of imagination and feeling. 4. Organization of material. *a.* Parallel outlines. *b.* Wayland's alliterative outlines. *c.* Rickard's scheme of direction. 5. Reviews and summaries. *a.* Selective not exhaustive. *b.* New views. *c.* Vital associations; directions to pupils. V. Common difficulties and faults. VI. The technic of a supervised study period in history — the Merriam plan.

XI. SUPERVISING THE STUDY OF CIVICS 276-286

I. The present significance of the subject. II. How to secure interest in civics. III. Methods of studying civics. 1. Group assignments. 2. Current topics — the E. E. Smith plan. General Summary.

XII. SUPERVISING THE STUDY OF MATHEMATICS 287-304

I. The problem of reorganization. II. The value of mathematics. III. The teacher of mathematics. IV. Supervising the study of mathematics. 1. The assignment. 2. Class management in mathematics. 3. The method of teaching must be symptomatic. 4. Reviews and examinations should test ability to think and apply mathematical knowledge. 5. Arouse and accumulate interest by giving high appraisal to work. 6. Frequent and systematic use of library. 7. The teacher must advertise the subject by striking media.

8. The aim constantly in view should be to develop independent thinking. 9. Class management of double period in Joliet, Ill. General Summary.

XIII. SUPERVISING THE STUDY OF THE SCIENCES . . . 305-317

I. General *vs.* Special Science courses. II. The aim in studying science. III. Suggestions for directing the study of science. 1. The laboratory. *a.* The experiments. *b.* Notebooks. *c.* Mill's directions for laboratory work. 2. Outdoor observation and general reading. *a.* Original problems. *b.* Recent additions to the fortune of knowledge. General Summary.

XIV. HOW TO SUPERVISE THE STUDY OF LANGUAGES . . . 318-347

I. The most workable aim. 1. The relation between Latin and English. II. Methods of approach. III. Supervising the study of language. 1. How to begin—the Gurlitt Method—the Joliet Method. 2. Pronunciation. 3. Memory work and vocabulary. 4. Organization and translation—use of translations. 5. Conversation. 6. Dramatization and magazine work. 7. Schemes of directions and procedure—Symposium by several teachers. General Summary.

XV. SUPERVISING THE STUDY OF LITERATURE . . . 348-371

I. The purpose of literary study. 1. To gain knowledge. 2. To enrich one's vocabulary. 3. To cultivate style. 4. To relax the mind. 5. To appreciate the beautiful. II. What high school pupils like to read. III. How to study literature. 1. A broader course needed—the plan in Cicero, Ill. 2. How to direct the pupil's outside reading. IV. Methods of supervising the study of literature. 1. Studying the novel—how to judge its merits, special points, why read, the importance of detective and short stories. 2. The essay. 3. The drama. 4. Poetry. *a.* The problem of appreciation. *b.* The need of studying poetry. *c.* Special methods—paragraphing, classification of instincts and imagery, interpretation of allusions, biography of author, memorizing. *d.* Merriam on studying *Evangeline*. *e.* Reading. General Summary.

CHAPTER

PAGES

XVI. SUPERVISING THE STUDY OF THE FINE AND PRACTICAL ARTS	372-382
---	---------

I. The natural interest in art. II. The aim in studying art. III. Methods of supervising the study of these courses. 1. The method of application. 2. Skill through contact with life problems. 3. School credit for private work. 4. A study of crediting. 5. Bristol, Conn., scheme. 6. Suggestions for organizing courses in art. General Summary.

PART III

XVII. THE EFFECTIVENESS OF SUPERVISED STUDY	383-398
---	---------

I. Measured results. 1. The symposium at Columbia University. 2. Results in Trenton, N.J. 3. Newark, N.J., results. 4. Results in Joliet, Ill. 5. Statement of results in Minnick's investigation. 6. Breslich's results. 7. Loveland's results in Pottstown, Penn. 8. Results in Pueblo, Colo. 9. Results in Cairo, Ill. 10. Results by Rickard in Oakland City, Ind. II. The teacher's preparation — Rickard's directions. General Conclusions.

APPENDIX. Organization of Supervised Study in Richmond, Va.	399-408
BIBLIOGRAPHY	409-416
INDEX	417-433

SUPERVISED STUDY

PART I

CHAPTER I

THE PRESENT DEMAND FOR SUPERVISED STUDY

I. THE INTERCHANGING INFLUENCE OF SOCIETY AND THE SCHOOL

WHEN the primitive savage taught his boy to handle the bow and arrow, the spear, or the sling; taught him the use of certain herbs, and the meaning of the east wind and the wind from the west and north; taught him with an earnestness and eloquence that might well be imitated by modern teachers how spirit forms inhabited dark mysterious caves and regions near the hunting grounds, how dragons and demons and witches lay in wait to destroy the unwary hunter; taught him, moreover, the most facile method of catching game, building a fire, and building a home — all of this was education by personal supervision. It was education by means of life itself. The bow and arrow were the same that the skilled arm would a little later send to the hunt. Subject matter and method were suited to the economic needs of the time by the employment of the very means necessary for an effective existence. In a true sense this was real vocational education.

True, in that primitive form, it has been the method by which society's agency — the school — has been organized

and reorganized. The school must reflect the needs of the time and provide for them as well as society makes possible. It is true, of course, that some of these needs are constant. In the gradual evolution of intelligent life a few basic instruments of group life have been established as necessary for individuals in all groups. There can be no intimacy with other members of the human family if the individual is unable to read and write or attend to the details of trade or business. All men must know the simple fundamentals of arithmetic. Society very early found it necessary to teach its coming braves or workers, as well as rulers, those subjects by which it expected to maintain its strength and increase its influence. As civilization has become more comprehensive the school has evolved into its present complexity that in itself indicates how far-reaching is the domain of human achievement.

The foregoing generally accepted and quite evident truths have not, however, found definite school expression without considerable struggle. Strange as it may seem, society has created a means of progress and then must be compelled by this very agency to adjust the means of education to fit needs created by the schools but not clearly understood by society. In other words, the school not only reflects the social needs at hand, but it forces society to recognize new needs and new problems, and insists upon the right to add subject matter and devise methods of coping with these problems. Or, and this amounts to the same thing, the educational agents of society find it necessary to urge the several communities to adopt better means by which the old and constant needs can more effectively be supplied.

Inevitably, the social order has evolved a number of con-

ditions that in one way or another compel thoughtful readjustment. Some of these, intimately associated with school work, will now be considered.

II. PRESENT CONDITIONS OF SOCIETY AFFECTING THE SCHOOL

1. **The Family.** The modern American family bears little resemblance to its primitive ancestors — the kinship, patriarchal, and similar types. In fact, one finds a wide difference between the early American family of the eighteenth century and the latest twentieth-century marital conditions. The sacred view of family life in early New England seems to be disappearing. True, marriages are still solemnized by the various churches, — the form of sacredness is retained, — but the spirit, the control of the family, seems to be less reverent, and less unified than in the early Colonial times. In the South the beautiful family life on the extensive plantations is almost a memory, although one still finds delightful evidences of its once unsurpassed hospitality.

The American family of to-day is the result of several inevitable social and economic forces that doubtless are peculiar to a type of civilization like our own highly evolved democracy. It should not be concluded that the modern type of family, because in many respects different from that of "the good old days," is wholly inferior to its earlier forms. Unquestionably, some worthy characteristics have suffered regrettable decline, but on the other hand the modern American family has distinct advantages.

The following influences have singly or collectively modified the conditions of the modern family in the United States :

a. *Biological Conditions.* In his discussion of *The Family* Dealey writes of early New England population :

“With a whole continent before them inviting settlement, there was a premium on population, so that early marriages and large families were the rule. There were few bachelors, still fewer spinsters, and the widowed of either sex seldom spent many months in mourning. In some colonies special taxation and severe regulation discouraged bachelors from the selfish luxury of solitary living.”

Whoever is familiar with the development of real estate, for example in New York City, has observed the increasing number of so-called “bachelor apartments,” arranged conveniently for the “selfish luxury of solitary living.” Twenty years ago such dwellings were almost unknown. With the rapid increase of luxuries and the even more rapid multiplication of wants the cost of living has advanced beyond the income of the average young man. Furthermore, it is an open secret that many young women are unwilling to repeat in their own lives the poverty and consequent needful sacrifices of their parents while accumulating comparative wealth. The result is that the race is reproducing itself at a slower rate than heretofore.

The modern trend is manifestly toward city life. In 1790 only 3.35 per cent of the people in the United States lived in cities. According to the census of 1910, 46.3 per cent of the American population is urban. The reasons for this are easy to find. The city offers markets, shopping facilities, amusements, home conveniences, manifold diversions. Crowds stimulate the social instinct. Industries and transportation have developed cities and attracted the hordes who work in

factories or serve in the offices of great business concerns. Because large, convenient, and alluring, the city appeals not only to rural dwellers but to the countless immigrants from Europe and the Orient. The immensity of the city seems to symbolize unlimited opportunity in this world-famed Eldorado! One finds, then, that city population is a confusion of the rural and foreign born with the native urbanite whose family is comparatively small.

How does this affect the demand for supervised study? In larger families the older children are as a rule given charge of the younger. There is a spirit of coöperation and unselfishness in large families that emphasizes the need and beauty of service. Again, the large family is a little world with its own amusements, diversion, duties, and preferences. The home spirit is warm. Outside distractions are less serious. There is likely to be a mutual respect among the members. Parental authority is frequently less severe but more cherished. So far as the writer's observation extends, these characteristics of large families are quite uniform. Now, in such a home the pupil with home lessons has a number of tutors who perhaps too generously will help him with his home work, but the point is — he does get help.

On the other hand, the large poor family may by this very fact be unfavorably situated for supervising the study of school assignments. There are family cares, distractions, and unfortunate background—all militating against an atmosphere that is conducive to the best kind of studying.

b. Architectural Conditions. The modern dwelling is both an improvement over houses in the past and a lowering of the standard. In cities many homes have conveniences undreamt of by our grandparents. At the same time these arrangements

of living are no longer novel; they must be judged in relation to present needs. One finds the housing capacity in the big city inadequate; sanitary conditions often are frightful. The increase of tenements, with ill-lighted alleys and air shafts, a few small rooms, gloomy and ugly, or if generally cheerful and sanitary, still small and barely large enough — this type of home presents meager opportunity for study. In districts where the family owns or rents a house, the conditions usually are much better, but even here the chances for the school pupil to have a private study room are quite rare.

The following Table I shows where 3252 pupils in seven high schools of Illinois studied in 1914.

TABLE I.—WHERE HIGH SCHOOL PUPILS STUDY

CLASS	OWN ROOM	%	LIVING ROOM	%	OWN AND LIVING	%	ELSEWHERE	%	VARIES	%	NOWHERE	%	NOT ANSWERED	TOTAL
Freshmen .	325	29.79	564	51.69	46	4.21	61	5.59	50	4.58	8	.73	37	1091
Sophomores	270	31.28	397	46.00	46	5.33	46	5.33	66	7.64	6	.69	32	863
Juniors . .	202	29.66	323	47.43	36	5.28	43	6.31	53	7.78	3	.44	21	681
Seniors . .	196	31.76	251	40.68	40	6.48	48	7.77	53	8.59	—	—	29	617
Totals .	993	30.53	1535	47.20	168	5.16	198	6.09	222	6.82	17	.52	119	3252

It will be seen from Table I that 1535, or nearly 48 per cent, studied in the living room. About 31 per cent had their own room. Of the 48 per cent, 564 or nearly 52 per cent were first-year pupils grappling with new subjects, new methods, new points of view. The author found in this survey that the largest per cents of pupils studying in the living room lived in the three largest cities that he visited while making the investi-

gation, and also that in these same cities first-year pupils more than others did not have their own rooms for quiet studying.

c. Industrial Conditions. The instinct of self-preservation with its expression of the individual's independence has found unlimited stimulus in American democracy. Once, the child remained consciously and quite willingly dependent upon the parents for a number of years. Beyond the home there were only a few occasional attractions indulged in, and these did not materially disturb family unity or stability. But to-day the boy seven or eight years old begins to earn "spending money" by selling papers, running errands, or doing odd jobs. Parents pay their children a few pennies a day for doing household work. The child is early taught — and rightly so — to be economically independent. By the exercise of this independence the child becomes skilled and even versatile. His plasticity, curiosity, and energy make possible a wide range of information and ability, beyond that of the parents in many instances. The older children are even more independent. They usually pay for their board and room at home. They exercise their own judgment in selection of wearing apparel. They make acquaintances outside of the circle of friends frequented by the parents. Resulting from this economic independence is a decrease in respect for parental authority. The children may even feel superior to their parents.

The industrial unity of the early family required that every child contribute to the general store of supplies. Practically everything needful was made at home. Candles, clothing, furniture, food — all necessities were made by the family. There was constant exchange of service. The division of labor was individual and familial. The small family group was quite sufficient unto itself. To-day, however, industry is

widely differentiated. Few things are made at home. Many families rent apartments and board. There is little or no visible evidence of interdependence. Each member of the family feels that he owes nothing to the others and that they owe nothing to him beyond monetary assistance — and this is an elastic band.

The school child in these independent family groups soon finds that there is little time, little inclination, and less ability to serve him along intellectual lines. Ideals and interests have become so individualized that only with difficulty can any member of the family render competent service to the child attending school. Moreover, providing the child with a suggestive and hygienic study environment is unthought of or at best not understood. The child must attend the school — so the law demands, and what a relief to the mother! — but beyond the common necessities little is contributed in many homes toward the success of the child's career.

d. Social Conditions. With the industrial and economic independence of the members of the home there has come the enlarged opportunity for social independence. Modern amusements have a constant variety of appeal. Facilities for travel have added to life's pastimes. Lacking unity along other lines, it cannot be expected that all the members of the family will have the same friends or the same sources of enjoyment. With diversity of time and place in religious worship, with different hours of employment, and also individual tastes well developed and frequently indulged in, it is not surprising to find that the home has become in many cases more of a hotel than a hearth. The result of this conflict of habits is evident from the following tables including conditions in Iowa and Minneapolis, Minn.

TABLE II.—EVENINGS AT HOME EACH WEEK

	7	6	5	4	3	2	1	0
Iowa City . . .	36	41	92	90	68	34	7	15
Dubuque . . .	25	31	70	99	73	33	11	7
Burlington . . .	15	20	76	88	31	17	3	6
Ottumwa . . .	21	45	106	132	77	26	5	9
Minneapolis . .	97	137	344	409	249	110	26	37
	91	55	79	56	45	25	15	14
Two small schools	8	20	26	19	16	9	2	14

It was found in Iowa that pupils spending 4-7 entire evenings per week at home average 55 failures to every 100 pupils, but pupils spending 0-3 evenings per week at home average 135 failures to every 100 pupils, some failing in more than one subject.

In Minneapolis it was learned by the Schoolmasters' Survey that 8 per cent of the mothers and 10 per cent of the fathers were absent from home more than two evenings or afternoons (in the case of mothers) a week; while 40 per cent of the fathers and 46 per cent of the mothers were absent once a week. Only 54 per cent of the pupils had the stay-at-home habit. In 20 per cent of the homes there was "company" twice a week; in 12 per cent three times a week. Approximately 50 per cent of the families represented in the investigation ate breakfast together about three times a week; 26 per cent were never together at the morning meals. The children slept late and ate breakfast on the run to school. "Thus they miss not only good training in punctuality, in formal conversation, and in deliberation, but they actually injure their health besides."

The writer's investigation of study conditions in seven high schools of Illinois in May, 1914, throws some additional light on this matter. Of 1091 *first-year* high school pupils 27.54 per cent attended parties away from home at least once a week, and 16.6 per cent from one to three times a month. 7.77 per cent had parties at home at least once a week; 12.28 per cent from one to three a month. 24.13 per cent attended the theater once a week, 28.19 per cent once or more a month, 59.30 per cent went to the "movies" at least once a week, and 38.13 per cent more than once a week. Of 863 *second-year* pupils 30.80 per cent attended parties once a week, 12.26 per cent more than once a week. 8.32 per cent had parties at home once a week; 12.04 per cent one to six a month. 28.78 per cent attended the theater at least once a week and the movies 57.65 per cent at least once a week. Of 681 *third-year* pupils 38.16 per cent went to parties once a week, 16.4 per cent once to six times a month. 7.62 per cent had parties at home once a week, and 12.56 per cent once to three times a month. 20.21 per cent went to the theater once a week; 26.84 per cent once to six times a month. 57.98 per cent went to the movies once a week, and 35.52 per cent more than once. The 617 *grave seniors* are not as grave as reputed. 36.44 per cent attend parties once a week, and 15.70 per cent from one to six a month. 12.32 per cent have weekly parties at home; 11.46 per cent once to three times a month. 25.41 per cent of them enjoyed the drama (?) once a week, and 34.4 per cent went to the theater once to six times a month; while 43.73 per cent watched the thrilling reels once a week, and 26.88 per cent more than once.

Summary. From the foregoing it is clear that the family, with its variability in size, lack of room, and diversified indus-

trial and social activities, offers little or no opportunity for the efficient guidance or supervision of the child's study habits during its school years. If assistance is offered, it is strained, nervous, often inaccurate. The child hardly feels that its problems are of interest to the others. Control and supervision are limited to a requirement that the child study at a certain time, but to compel a child to study in an environment full of distractions and with no suggestions of intellectual effort is not likely to produce favorable results physically or intellectually. Moreover, the high school pupil is entitled to considerable social life. He needs it for relaxation and he needs it for easier dealing with people. A long home-study schedule seriously interferes with needful recreation.

2. **The Modern Program of Studies.** When education meant a reasonable proficiency in the three R's, it was a comparatively simple task to study. Books were few and thin. The applications of knowledge were few and local. School work doubtless had its hardships because stern and relentless discipline required the child to "toe the mark" under the threat of a severe flogging. But the lessons were mastered at home in the family circle or in the school building in the presence of the teacher.

To-day, however, there are over 200 subjects taught in the high schools of America. Some of these are closely similar to others, but as stated in a hundred catalogues in 1913 the subjects are over 200. Requirements have increased and electives have multiplied. Books are many and heavy. Hours are long and crowded. Of necessity, school work is becoming highly standardized, so that it is now more difficult for a child to "slide through" in our large school systems. The distances between school and home are often

long. With a full day's work, under a pressing organization, it is small wonder that many children fail to accomplish as much as parents and teachers require.

The complexity of the school program, with its rich additions and many subjects still unorganized, presents a problem to the conscientious parent and teacher who are just as solicitous of the pupils' health physically as of their mental development. The problem has its various divisions. The enriched program of studies calls for a wise and just differentiation of courses, so that no pupil shall need to study subjects that can have little or no value in his life career. Requirements for high school graduation in some places have been reduced to a bare minimum. By the organization of Junior High Schools in nearly 300 systems this adjustment of subjects to life needs of differentiated groups of pupils is well provided for. Many effective administrative policies have been enacted for the relieving of uneconomical studying in the high schools throughout the United States. Hygienic schedules, modern buildings, more highly trained teachers, social organizations, departmental viewpoints and groupings — these as well as better texts and methods of teaching with the increasing reports of investigations carried on by high school teachers and others interested in secondary education, witness to the rapidly evolving attitude that the American high school requires expert and wide expression.

Because reconstruction and revision are the spirit of modern life, no apology is needed for suggesting that in all of this improvement supervised study should have a prominent if indeed not a central place. With buildings hygienically sound, with methods of teaching and teachers pedagogically closer to the standard, there is little if any reason to deny that in the

high school building should be concentrated the intellectual life of young people during the formal learning period. Here the environment can be made conducive to studying. The tools of studying are easily assembled. The most logical individual to do the work is here present, for the teacher's task should be largely to prevent the pupil from forming bad habits of study and to help him to form correct habits of intellectual work.

Arguments in behalf of supervised study are more justified when one considers the results of this new method. In Chapter XVII some of these benefits are noted in detail, but, to anticipate, it has been found by many superintendents that retardation and elimination have been greatly reduced by this means. Greater enthusiasm and initiative are noticeable. The effect on the teachers is likewise wholesome, for supervised study involves a reduction of the "telling" method. The teacher is not expected to ask as many questions as now seem necessary in all too many schools.

3. The Modern Emphasis on Individual Differences. To the student of the history of education the modern tendency to treat scientifically the problem of individual differences is especially interesting. For centuries individual instruction was the common method of class management. Each pupil was called to the teacher's desk for the purpose of reciting — usually an exhibition of memory efficiency. The noteworthy efforts of Lancaster and Bell to improve this wasteful method had wholesome results. Groups containing usually ten pupils were given in charge of a superior pupil titled "monitor." Several of these groups would recite at the same time to their respective monitorial instructors. Ample provision was made for individual capacities by allowing pupils to recite in each subject with the group to which his progress most logically

fitted him. In arithmetic, for example, he might be a member of a very advanced group, and in spelling find his place in a slower group.

The recognition of individual differences has recently received more careful observation and organization. Thorndike, Ayres, Courtis, and others have performed various kinds of experiments and have devised methods of exact measurements, so that what has commonly been accepted as true — namely, that pupils in a class cannot all progress at the same rate — is now scientifically demonstrated and by different methods provided for. These methods will be discussed in a later chapter. Class instruction, having proved an immense time-saver over the centuries-old individual instruction, is inadequate and unjust to the differing capacities of school children. Some pupils easily adopt effective methods of study and achieve quick results. Others work less effectively and more inaccurately. The former deserve greater opportunities for original and advanced work. The latter require and should have instruction in how to study.

Although, in the main, mental processes are alike in all individuals, differing qualities and amounts of instruction and learning tend to produce marked differences among pupils in their ability to grasp new material. Vicious habits of study, easily acquired in earlier grades, persist and become increasingly stubborn as the pupil goes from grade to grade. He adopts the easy method of memorizing. Independent thinking has never been taught him — he believes that this is the ability of only a favored few. Consequently, when he finds in high school that memorizing is not a successful method and has no substitute, his progress is retarded, and he loses interest and courage. The trouble began early in his school

career. It could have been corrected or prevented in the lower grades, as Lida B. Earhart, Ph.D., has shown, but in mass organization the individual was submerged. "The survival of the fit" controlled promotions — the weak had to fall by the wayside.

Supervised study in the high school is a definite and scientific attempt to correct these long prevalent evils. It comes late, but better so than never coming at all when the intellectual and social advantages of pupils are at stake. The supervision of study makes possible the advance of each pupil according to his individual capacities. There is an equal chance for every one — equal in the sense that standards are individual, not class — so that whenever each pupil masters his difficulties, however large or small the percentage of quality may be, he may advance.

SUMMARY

These considerations, then, are some of the more evident social and educational conditions that have stimulated educators to revise methods of class management. The family is no longer the close unit of former days. Its members are more independent of one another, and this independence becomes evident early. The rich program of the schools renders it quite impossible for members of the family, even if so disposed, to help the pupil accurately with home study. Individual differences are being more adequately recognized. Schemes of class promotions are now felt to be unfair to pupils often retarded for perfectly legitimate reasons. Opportunities must be provided for every pupil to advance according to his capacity. This need, with fairness to the standards of the school as well as to the limitations of its pupils, is met by supervising the study habits of each pupil.

CHAPTER II

THE CONCEPTION OF SUPERVISED STUDY

I. SUPERVISED STUDY A NEW TERM

THE current movement of uniform terminology in high school administration, stimulated and developed in the main by Dr. Charles Hughes Johnston of the University of Illinois, is one of the fortunate outcomes of scientific thinking on the problems of secondary education. The list of terms on which there should be general agreement is comparatively long and comprehensive. Each term, such as "program of studies," "curriculum," "course," "unit of instruction," "pupil," "credit," etc., reflects careful and coöperative thinking. The many intricate problems of the high school are here dealt with in a clear and intelligible form. Many high school problems would appear less complex and hopeless if schoolmen employed a language whose various terms indicated a clear-cut distinction of purpose, function, and method.

It is interesting to find, however, that the term "supervised study" is not included in the list. At first this might seem a serious oversight, but in reality it is a silent confession of the fact that no one engaged in high school work or concerned with the problems of secondary education has been able to define the term. It is new. One does not find it in educational literature of five years ago. Only within the last two

years has its usage become fairly well organized. It is still, however, unknown to many teachers, and there is no general understanding of its technical signification.

II. MISCONCEPTIONS OF SUPERVISED STUDY

This condition doubtless accounts for some of the indifference, and even antagonism, displayed toward what is supposed to be its method. One hears it frequently said by high school teachers that the pupil must rely on himself. Grappling with a problem until eventually he solves it, gives the pupil confidence and ambition. "It makes him think." It happens only too frequently that travelers in a new country lose their way. They may know many things about traveling. By tedious, arduous, discouraging, and perhaps injurious attempts they eventually may find familiar paths and havens. Doubtless they did considerable thinking, and their satisfaction upon at last finding the right way was, of course, a natural state of feeling. But would it not have been better never to have missed the path? If the pupil's power to think depends on tedious, prolonged, and all too frequently unsuccessful effort, then it is small wonder that so few high school pupils think — nay, more — it is the possible explanation of the dearth of thinking among the masses. The doctrine of difficulty has its martyr-host as numerous and pathetic as the victims of untested opinion and ideas in religion and government. The learning process is difficult enough without putting a special premium on difficulties.

Intense Effort must be Directed. Advocates of the strenuous life in education at times seem to ignore the fact that effort for its own sake is sheer waste. Effort is a means, not an end. The automobile stalled in a mudhole will grumble and roar

and pull. There is effort a-plenty and there is waste of "gas," tires, time, nerves, and good disposition as well. But direct this effort by chains, boards, or special devices for overcoming such mishaps, and effort proves successful. The athlete puts forth effort in the game or on the track. But he must be economical. He must know how to breathe, how to mass his strength at the point of greatest strain, how to use just enough and no more, being always ready for the inevitable need of strength during the last minute of play, for the last lap of the course.

In studying, there is perhaps more waste of time and more waste of nervous energy than in any other department of educational life. One might add that there has been wanton waste of paper and pencils as well, in the usual methods of studying. Mass teaching, hurried assignments, indiscriminate marking, together with the expectation that studying is a self-evident process, have wrought grave injustice to the pupils and have delayed a finer efficiency of school product. There are, however, hopeful signs on the horizon. Superintendents, principals, and teachers are uniting in a reorganization of high school methods of teaching, in which the factors of the educative or learning process will be given greater weight and more conscientious oversight.

III. VARIOUS ANALYSES OF SUPERVISED STUDY

In our attempt to formulate at least a tentative definition of this new term, it will be suggestive to examine some of the recent literature dealing with this subject.

In July, 1914, there appeared *The Modern High School*,¹ in which Chapter X by the present author deals with "The

¹ C. H. Johnston, Editor, Scribners. 1914.

Direction of Study as the Chief Aim of the High School.”
The main headings of the chapter are as follows:

The need of attending to the technic of study.

The meaning of study.

Factors in the technic of study.

The teacher an Alpine guide.

Assignments.

The study period.

Management of the study period.

Plans of supervised study.

Difficulties of supervision; a feasible plan.

How to use books — The function of books in the technic of study.

Conditions of effective studying — incentives, study room, light, temperature, diet, sleep, health.

Hindrances — laziness, mind wandering.

The social appeal of the high school through study.

Two volumes of unusual significance appeared during the summer of 1915. One volume, *Methods of Teaching in High Schools*,¹ devotes Chapters XVI and XVII to “Supervised Study” and “The Use of Books.” The main points of supervised study are:

1. The supervision of individual students who are studying silently at their desks should replace a considerable part of the time now spent on recitations and home study.

2. Poor students especially fail to profit under the system of recitations based on home study.

3. Precisely measured, experimental investigations show that supervised study improves the work of poor students.

4. Divided periods, part for recitation and part for supervised

¹ S. C. Parker, Ginn & Co., 1915.

study, should be arranged as regular parts of the daily programs in most high school subjects.

5. Conditions favorable to study are those favorable to concentration of attention.

a. Physical conditions and certain routine habits may be easily improved.

b. Spontaneous interest and concentrated thinking are more difficult to secure, but are essential.

6. A special technic of supervising study should be mastered by teachers. It should include

a. Skill in determining the character of the progress being made by students while they are studying.

b. Skill in stimulating and aiding this progress by means of questions and suggestions without assisting too much.

The main points of the chapter on "The Use of Books" are :

1. The use of books is a most important process in social life, and it is the most economical means of instruction in school.

2. Textbook study should be supplemented by other required readings and by independent investigations by students upon assigned topics.

3. Great care should be exercised to select textbooks that treat subjects intensively in a manner that can be easily understood by students.

4. The recitation period should be used primarily for interpretative and supplementary discussion, although testing should not be neglected.

5. For required supplementary reading, sufficient duplicate copies of a few serviceable books should be available, and exact page assignments to these should be made.

6. Contribution recitations can be effectively organized on the basis of such supplementary reading and of more elaborate independent investigations of special topics by individual students.

7. In such investigations, students should be trained to pursue standard bibliographical methods.

8. The system of oral reports based upon such investigations should be standardized and routinized so as to include frequent conferences with the instructor, descriptive bibliographies, carefully prepared briefs, and oral reports of varying length adapted to the capacities of individual students.

The second volume, *The Psychology of High School Subjects*,¹ contains in Chapter XVIII several pages of helpful suggestions on "Teaching Students to Study." Among them are:

Psychology as a science of methods of study.

Psychology of different types of study.

Rapid survey.

Observing methods of study.

Asking questions of people and of books.

Formulating productive questions.

The discovery of problems.

The advantage of group study.

Training in economical methods of study.

Anticipation of applications.

Students profit by use of standards.

Progression a test of effective training.

School subjects require psychological analysis.

Subject matter less important than progression.

Organizing a study program.

Selecting essentials.

Elaborating a theme.

Reviews.

Mental hygiene.

Dangers of overstimulation and of distraction.

Adjusting study to outside engagements.

Excellent students require the maximum of attention.

¹ C. H. Judd, Ginn & Co., 1915.

The foregoing lists indicate the present scope of the subject. Supervised study may be regarded, in the light of these topics, as a new form of

1. Class management.
2. Methods of teaching.
3. Curriculum organization.
4. School administration.

IV. THE FOURFOLD APPLICATION OF SUPERVISED STUDY

1. **A New Type of Class Management.** Supervised study involves a change from mass teaching to individual or smaller group instruction. In this book a number of schemes are described that aim to break up class teaching into more effective forms of dealing with individuals from the standpoint of their mental, hygienic, emotional, and vocational needs. It will be found that some of these schemes seek to retain the form of class organization and to supplement it by study periods effectively supervised, or by a study coach whose office is both advisory and tutorial. Other schemes minimize class organization and stress the need of devoting most or all of the class period to individual studying. Whatever the plan advocated, it will be observed that the pupil is regarded as possibly different from others in native capacity or in temporary responsiveness to certain phases of the course. The tendency in most of the supervised study plans is to "relief" the individual, to set him apart from the group so as to give him a better opportunity to employ his type of learning to an efficient achievement according to his rate of progress.

2. **A Change of Accent in Methods of Teaching.** The revision in management necessarily affects the teacher's method of unfolding new material or in transferring old matter into

vital applications. Whereas, in all too many cases, the assignment has been hurried, indefinite, and insufficiently motivated; under the method known as supervised study, the assignment is advanced to a place of fundamental importance. It will be seen that in the following pages considerable space is devoted to the assignment. It is the all-essential of a good start in studying. It is the teacher's golden moment for stimulating interest, suggesting methods of studying, and presenting a clear explanation of what is involved in the new lesson. The assignment is the teacher's marching orders to the class. She must know what is important, and she must be able to anticipate the difficulties inevitable in every subject.

But the new type of teaching embraces much more than this. *The teacher is now to be regarded as a director of study.* Conditions and methods of effective work are taught and supervised. The pupil's whole life is brought into relation to his mental task. Instead of being regarded as *par excellence* an undeveloped intellect the learner is to be treated as an unfolding *life* whose every activity and attitude in some way is related to the studying of the assignment in hand. Physiological, physical, and psychological conditions are given earnest attention. The actual method of attacking the new lesson is watched and *checked at the point of wrong departure!* The pupil is not allowed to become lost. He is given a map; he is given specific directions for using it; and he is, moreover, guided away from treacherous ground.

The objection often urged that supervised study prevents the pupil from relying on himself, is answered sufficiently by suggesting that without it he does not rely upon himself, but instead enlists family, friends, and classmates in his behalf. Home study is harmful, not only because unhygienic, but also

because it tempts the pupil to claim as his own work what others have done for him. Problems in mathematics, theme writing, and outline work are referred to others whenever feasible to do so. This is natural. The difficulties are severe, the assignments are unreasonably long, and class marks are usually impersonal. What is the pupil to do? Let him without offense in this type of home study cast the first stone.

Supervised study means working with the pupil but not for him. It is preventive. It deals not merely with subject matter, but with methods of learning it, and for this reason it is necessary that the teacher for a considerable time devote part or most of the class period to this fundamental of learning. The high school pupil must be taught how to think, how to organize, and how to apply.

3. Discriminate Organization. But supervised study involves even more than all this. By the aid of careful measurements or scientific investigation the contents of each course are analyzed so that its development may be as discriminate and balanced as possible. What are the general difficulties encountered by most pupils in language study, mathematics, sciences, etc.? How can they be either avoided or so anticipated that the pupil will spend less time on the no-progress level or get the most effective advantages out of it? Are all parts of a subject equally important? To what extent can the "old line" subjects be rejuvenated into compelling stimuli of study? If a large number of pupils regard English and history as useless, this criticism should excite the teacher to an investigation of the reasons for such antipathy. High school pupils are thinking individuals. They are frequently hasty in their judgments and extravagant in their conclusions, but sometimes they are right and possessed of electric insight into the frauds,

the cant, the artificiality of much that flaunts the noble name, education.

These are days of surveys, investigations, experiments, scientific doubt. Deduction and opinion are losing caste. Authority is being pulled from dusty thrones and cross-examined. The millennial bias, that a thing is right because it is old, is suffering a twist into a frontal position where the past is looked at face to face and respectfully requested to divulge by what mystic process it became authoritative in the beginning. If the evidence is forthcoming and is rational or even true to experience, authority will be escorted back to its throne, which in the meantime has been well dusted by approved methods, let us hope.

Probably the ancient trivium and quadrivium, if taught in the spirit of modern needs, have superior value, but it is important that those who teach and those who study understand why these subjects are included in the educative process. Let us throw more light on these subjects, and illuminate the dark caves and catacombs of some of these imperial knowledges that emperors, kings, and nobles studied as fit only for the high-born. It may be true that all who master them are high born, but in a democracy high birth is less significant than high achievement.

4. **School Administration.** Supervised study sooner or later will involve a change of school administration in at least four directions.

(a) *Less Home Study.* If the function of the school involves direction of the pupil's preparation of lessons so that these may be learned most successfully, it will be necessary, during at least the first year of every new subject, that such directed study take place in the school and that home study be omitted

as a possible interference because of the forming of unfavorable habits of study. The chief objection against abandoning home study comes from parents. They still believe that the pupil must be kept busy by long home work. The favorable results of no home study in Joliet, Ill., and Sacramento, Cal., doubtless can be duplicated elsewhere. When the pupil has received considerable training in studying, it will be safe to require a minimum amount of work to be done at home, but *the bulk of preparation should be done during the study period and vacant periods.*

(b) *Longer School Day.* This has been introduced in several schools. The addition of an hour to the school day with no home study is beneficial to pupils and teachers, providing the teacher has been freed from the slavery of correcting papers. Intellectual work, confined to the school day, allows the pupil to play and to engage in supplementary reading or social pastimes. If the social life of adolescents must be controlled by severe home assignments, it is hardly an advantage to effective studying, for the distracting desires and thoughts cannot be shut out so easily. In the school the suggestion of study is in itself helpful. The group habit is imitated by the individual. If, moreover, it is understood that the pupil's time for preparation is limited to the school hours and that his marks depend somewhat upon his industry, it is likely under proper supervision that he will prove diligent in this work. The hours outside of school can become rich in the storing away of general information, in enjoyment of legitimate pleasures, in play and refreshing sleep.

(c) *A New Type of Teacher.* The inability of teachers to undertake supervised study is due in the main to the fact that they have not been trained for this kind of work. Training of

teachers should now include specific instruction in the organization and direction of this important duty. It is far from the author's desire to increase the burdens of an already overworked and sacrificing army of teachers. But he has reason to believe that supervised study will lighten their present tasks by relieving them of those details that are now the distressing routine of the classroom. Correction of many papers, asking many questions, depending upon rapid responses in recitation for evidence of teaching ability — these are gloomy responsibilities. Growth in the following qualities that doubtless belong to the successful study supervisor would spread joy throughout our profession :

1. Sympathy that rests on a knowledge of the pupil's point of view.
2. A broad background of information about the customary attitudes of high school pupils,
3. Tact in dealing with individuals,
4. Knowledge of what is implied in the psychology of subject matter,
5. Ability to adapt methods to local conditions.
6. Trustworthiness — respecting the confidences of pupils.
7. Leadership — involving enthusiasm expressed in real love of the subjects taught — an affection based on understanding purposes, difficulties, and application of the various subjects.¹

(d) *Better Proportioned Expenditure of Money.* Here is the rub! Although supervised study in some form of the divided period does not require a very great reduction in the size of class, a certain increase in the teaching force may be imperative in some schools where teachers are expected to handle several courses. It is a question of proportioned cost, however. Dr. J. Stanley Brown, of Joliet, Ill., for example, prefers to spend

money in order to *prevent* repeaters rather than on the repeaters. If one estimates the drain of retards and eliminates on the school treasury and compares it with the estimated cost of increased teaching force, it is likely that the cost will be either so nearly the same or so much more wisely appropriated that the treasury will not be seriously handicapped.

An interesting statement of cost is furnished by Mr. E. A. White, Principal of the High School, Kansas City, Kansas.¹

TABLE III. — COMPARATIVE REPORT FOR FIRST SIX WEEKS' WORK
1913-1914

DEPARTMENT	NO. PUPILS IN DEPARTMENT		COST OF DEPARTMENT (INSTRUCTION ONLY)		COST PER PUPIL IN EACH DEPARTMENT	
	1913	1914	1913	1914	1913	1914
English	952	1059	\$1696.00	\$1846.50	\$1.75	\$1.74
Mathematics	809	796	1456.00	1479.00	1.80	1.86
Science	671	768	1230.50	1252.50	1.83	1.63
Foreign Language . .	659	783	1426.50	1468.50	2.16	1.87
History	378	592	675.00	847.50	1.79	1.43
Commercial	499	805	465.00	825.00	.91	1.02
Art	278	229	417.00	424.50	1.50	1.80
Manual Arts	303	512	994.50	1024.50	3.28	2.00
Physical Training . .	140	328	349.50	300.00	2.49	.91
Total	4679	5872	\$8710.00	\$9468.00	\$1.861	\$1.613

Or 25 cents per pupil class, which makes \$1.25 for each pupil, each having five studies for \$12. It makes a saving of \$15 for six weeks and \$90 for the year.

Supervised study was introduced in 1914. The high school employs fifty teachers and has an enrollment of over 1200 pupils. About thirty minutes of each period (there are five

¹ *Journal of Educational Administration and Supervision*, April, 1915.

sixty-five-minute periods with no laboratory periods) are devoted to study directed by the teachers, except in manual work and on laboratory days in science. Every teacher teaches five periods and five classes.

V. THE MEANING OF SUPERVISED STUDY

The foregoing comments and analysis have paved the way for a more compact statement of the conception of supervised study adopted in this book. *Supervised study is that plan of school procedure whereby each pupil is so adequately instructed and directed in the methods of studying and thinking that his daily preparation will progress under conditions most favorable to a hygienic, economical, and self-reliant career of intellectual endeavor.* It seeks to prepare pupils not simply for high school graduation or courses in higher education, but to an even greater extent for successful coping with problems in a world of intense competition, where superior achievement depends on initiative, clear thinking, and confidence in one's ability to organize experience for new adjustments. What is aimed at in supervised study is an individual who is trained to attack problems, and to organize his experiences into large controlling concepts, and who, moreover, has acquired ability to initiate or to serve without merely doing what he is told to do. The world of business is choked with unthinking imitators who parrot-like repeat exactly what has been said, but who cannot be depended upon to perform a task without being given constant and minute directions.

The world at large, business, and professions, are crying for independent thinkers, men and women who see a task and who can readily work toward its successful accomplishment without being watched at every step. College needs them. Pitiful

is the ignorance of students in a library or in their attempt to make an original report. Inaccuracies, haste, confusion abound. But they were able to enter college simply because they had certain units of subject matter! The world smiles and sneers at our ludicrous formalism. The time is ripe for another class of young people. Our high schools must face the need of producing individuals who, in every phase of school life, have been taught the meaning of and have been trained in the exercise of accurate, organized, independent, and practical thinking.

CHAPTER III

INDIVIDUAL DIFFERENCES

I. THE TRANSITION FROM CLASS TO INDIVIDUAL INSTRUCTION

SUPERVISED study rests partly on the now well-established doctrine of individual differences. Class instruction has proved ineffective in many respects because it employs arbitrary group standards suited to average or to superior pupils, but usually ill adapted to individual traits and capacities present inevitably in every class. Individual instruction was once the common method of teaching. As formerly employed, however, it was wasteful and wholly unscientific. The pupil recited at the teacher's desk, while the remainder of the class "cut up" and in various ways made it impossible to conduct an effective school. In smaller schools it of course worked better, but even here it lacked the background and efficiency that are embraced in the more modern form of individual instruction.

The disadvantages of class methods have been cited by many superintendents and teachers. These objections may be summarized in the criticism that individual pupils are at a disadvantage in large groups where, perforce, the rate of progress must be determined either by the brightest or by the slowest pupils or by the average with resulting injustice

to the whole class and to each group in particular. Obviously, the social law of retribution — the innocent must suffer with the guilty — should not mean in school work that the bright must conform to the weak or the weak to the bright. If there be any sincerity in our American creed of democracy, ample provision should be given by the state for each individual to reach his maximum in the best and quickest way. This is just to the state and fair to the taxpayer as well as to the pupil.

The difficulties of providing a class organization to meet this need of individuals are obvious. Elaborate systems have been suggested. The St. Louis, Elizabeth, Santa Barbara, Cambridge, Le Mars (Iowa), Portland (Ore.), Denver (Colo.) plans in this country, and the Charlottenburg and Mannheim plans of Germany, have sought to avoid class promotions in the elementary grades. The Pueblo (Colo.) plan and the several types of organizations discussed in the following chapters also aim to modify class teaching so as to give a more adequate amount of attention to the individual. It is at present impossible to judge the superiority of any of these types of organizations over one another. Considerable investigation must be carried on before it will be possible to define scientifically the advantages of any one above the others for high school purposes. It is interesting, however, to note that these attempts at efficient individual instruction are current; that there is a return to a type of individual instruction which at the same time preserves the advantages of class organization, for one must not ignore the social as well as the economic needs of group teaching.¹

¹ W. H. Holmes, *School Organization and the Individual Child*, Davis Press.

II. WHAT IS MEANT BY INDIVIDUAL DIFFERENCES

When one considers the various kinds of environment, the diversity of experiences in a single life, the many possible combinations of human traits due to intermarriage and also to employment, the overwhelming complexity of the influence exerted by the coöperation of the foregoing agencies, together with the modifications of innate capacities resulting from education, it is not surprising that man should differ from his fellows in many details. Among many similarities by which social groupings are feasible there are diversities and differences which stress the fact that however *groups* may have traits in common, individuals within every group differ from each other in many respects. Sex, "chance variations," opportunities for longer adjustment of one's "original nature," restrictions that cage and warp and degenerate native ability — all operate to produce variety instead of unity in the social order.

This is not only inevitable — it is the very foundation of progress. If true that like begets like, there must be agencies at work to modify or wholly destroy undesirable duplicates. But it is never true that like begets exact likeness. Nature could not advance if this were true. Biologists inform us that the existence of a million species is not improbable. The tendency everywhere notable is an eddy of the like and unlike whirling together in an ever changing advance to some unknown ultimate. The ancient philosophy of flux, with its tinge of cynicism or perhaps pessimism, has its alluring harmonies even to-day.

Of special importance in education are those subtle differences due to the interplay of man and his environment.

Whatever man does affects what he is. What man is determines in the main what he does. He is constantly under the pressure or excitement of this conflict and interaction. The school is organized to cultivate in every individual those things that make him easily and willingly a part of the world of men. But in doing so, teachers must note that a common goal need not imply a common method of reaching it. There is not *one* road in learning, but many.

Considerable impetus was given to a scientific study of difference by Dr. E. L. Thorndike and Dr. L. P. Ayres. Problems in retardation and elimination, waste, and mental types have been receiving, since 1900, wide attention. The motive in all this investigative work has been not merely to reduce the constantly increasing cost of education, but to make the ultimate product of school work as efficient as present equipment renders possible. The final outcome of this campaign of investigation and experimentation will involve, as it already does in some school systems, a thoroughly revised method of school and class management. The Junior High School is one result of this movement; vocational education is another; supervised study, a third. Curriculum reorganizations other than purely vocational are also based on this wholesome study of individual differences.

In the interest of supervised study individual differences will be discussed from three angles: (1) individual abilities; (2) individual image types; (3) individual dispositions.

III. DIFFERENCES IN INDIVIDUAL ABILITIES

1. **Differences in Rate and Amount of Work.** In the limited space of this book it will be impossible to do more than cite a very few illustrations of how peculiar are the differences of

abilities among individuals. Thorndike directs attention to what experienced teachers well know, — namely, that “the teacher of a class, even in a school graded as closely as is possible in large cities, where two classes are provided in each building for each grade and where promotion occurs every six months, will find in the case of any kind of work some pupil who can do from two to five times as much in the same time or do the same amount from two to five times as well, as some other pupil.”¹

a. Illustrations of Differences from Thorndike. Illustrations of such differences are given by Thorndike in the book referred to.²

Thorndike gives two Latin translations, of which portions are quoted below.

Two translations made by two pupils (A and B) of the same grade and class (and age).

The passage to be translated was as follows:

Atticus adolescentulus propter affinitatem P. Sulpicii, qui tribunus plebe interfectus est, non expers fuit illius periculi. Namque Anicia, Pomponii consobrina, supserat (M.) Servio, fratri Sulpicii. Itaque interfecto Sulpicio, posteaquam vidit Cinnano tumultus civitatem esse perturbatam neque sibi dari facultatem pro dignitate vivendi, quin alterutram partem offenderet, dissociatis animis civium, cum alii Sullanis, alii Cinnanis faverent partibus, idoneum tempus ratus studiis obsequendi suis, Athenas se contulit.

A'S TRANSLATION

Atticus a young man because of his friendship with Sulpicius, the tribune of the people who was killed was not free from this danger. For Anicia the wife of Pomponius had nursed Servius, brother of

¹ *Principles of Teaching*, p. 73.

² Quoted also by Parker, *op. cit.*, pp. 368-377.

Sulpicius. And so after Sulpicius was killed and after he saw that the state was aroused by the revolt of Cinna and that no opportunity was given for him to live in accordance with his dignity without offending one or other of the parties, for the minds of the people were divided, some favoring the party of Sulla, some that of Cinna, and after he thought it was a proper time for pursuing his studies, he betook himself to Athens.

B'S TRANSLATION

Atticus a youth on account of P. Sulpicus who was a tribune of the people, was not of his danger. And for Anicia, of Pompey, had , the father of Sulpicuo. And so by the killing of Sulpicius, after he saw the state to be disturbed by a tumult nor to give to himself the ability on account of his dignity, that might offend the other part, the unassociated minds of the citizens, with some Sullani other Cinnane might be favored by some the time was followed with their desires, Athens carried itself.

A similar contrast appears in the algebra papers. These papers were written by two pupils, A and B, members of the same class, in a test in algebra. The test on which they were based is given below.

Do these examples as quickly as you can.

Do not copy them, but put the work right under each example.

Take the quickest way you can to get the correct answers.

1. Simplify $\left(\frac{a^2 - b^2}{x - y}\right)\left(\frac{x^2 - y^2}{a - b}\right)\left(\frac{c^2}{x + y}\right)$

2. What are the values of x and y if

$$5x + 3y = 8 \quad \text{and} \quad 7x - 3y = 4$$

3. A shepherd, being asked how many sheep he had in his flock, said, "If I had as many more, half as many more, and seven sheep and a half, I should then have 500." How many sheep had he?

4. What are the values of x and y if

$$1 - \frac{x+y}{x-y} = \frac{3x}{x-y} \text{ and } \frac{7x-3y}{23} = 3$$

5. Simplify

$$\frac{\frac{m+n}{m-n} + \frac{m-n}{m+n}}{\frac{m-n}{m+n} - \frac{m+n}{m-n}}$$

6. If, to the double of a certain number, 14 be added, the sum is 154. What is the number?

A'S PAPER

(1) $c^2(a+b)$

(2) $12x = 12$

$x = 1$

$y = 1$

(3) Let x = no. sheep

$$x + x + \frac{1}{2}x + 7\frac{1}{2} = 500$$

$$2x + \frac{1}{2}x = 500 - 7\frac{1}{2}$$

$$2\frac{1}{2}x = 492\frac{1}{2}$$

$$\cancel{2}^{\cancel{5}} \times \frac{\cancel{2}}{\cancel{985}} x = \frac{197}{197} \text{ sheep}$$

(6) Let x = Number

$$2x + 14 = 154$$

$$2x = 154 - 14$$

$$x = \underline{70} \text{ the number}$$

B'S PAPER

(1) $\frac{a^2 - b^2}{x - y} \times \frac{a + b}{x^2 + y^2} = \frac{a^3 - 2ab^2 - b^3}{x^3 - 2xy^2 - y^3}$

$$\frac{a^3 - 2ab^2 - b^3}{x^3 - 2xy^2 - y^3} \times \frac{c^2}{x + y} = \frac{a^3c^2 - 2ab^2c^2 - b^3c^2}{x^4 - 4x^2y^3 - 2xy^4 - y^4}$$

(2) $5x + 3y : 8 :: 7x - 3y : 4$

$12x : 6y :: 8 : 4$

$x : y :: 2 : 1$

$x = 2$

$y = 1$

(5) $\frac{m^2 - 2mn - n^2}{m^2 - 2mn - n^2} = 1.$

Under present methods of teaching, A and B would be given practically the same treatment in the class, A receiving a higher class mark, but B would retard the progress of the whole class at this point and much of A's time would be sheer waste.

b. An Illustration of Difference by Monroe. Another illustration of this difference in ability is furnished by Dr. Walter S. Monroe.¹ Six tests were given to first-year high school pupils in two city high schools in March, 1914. In both schools the pupils doing unsatisfactory work at the middle of the year were placed in a beginning class, but these pupils were not given the tests.

It is unnecessary here to go into any of the details of the test beyond some of the results. Mr. Monroe says:

"One student performed 34 multiplications in three minutes, while in the same time another pupil performed only 3 multiplications. . . . The average number attempted is 17.3, which is almost exactly half of the maximum number. There is a large number of students who worked more rapidly than this average and also many who worked less rapidly. . . . In test A class 8 has an average of 21.5 examples attempted, while class 5 has an average of 12.2. Since these classes are from the same school, the difference in ability is due to the difference in the instruction or in the native ability of the students. . . . The average of class 10 is nearly three examples less than that of class 12. . . .

"In test B, 67 students or 34 per cent failed to get a single example right."

Monroe found also some interesting correlations between accuracy and speed.

¹ "A Test of the Attainments of First-year High School Students in Algebra," *School Review*, 1914.

"This high degree of correlation means that of these high school students, the ones who work rapidly work with a relatively higher degree of accuracy than those who work more slowly. This is contrary to the popular belief that those who work slowly work with greater care and accuracy. Evidently students who work rapidly may be just as accurate as those who work slowly. In fact, the data here show that they are superior in accuracy. Thus, accuracy must depend upon some factor other than the speed with which the student works. This being true it seems reasonable to expect that accuracy can be developed independently of speed, and that its development is not to be secured just by cautioning the student to work more slowly."

2. **Differences of Ability according to Subject.** There is a popular theory abroad to the effect that some people are "born short" in a certain subject — mathematics being a favorite illustration — and for this reason it is unfair to require these "born shorts" to study the subjects in which they have no native ability. Two studies bearing on this phase of individual differences will be considered briefly.

a. An Experiment in Correlation. Two students, Mr. L. E. Frailey and C. M. Crain, of the School of Education at the University of Illinois, undertook "to find, if possible, the correlation which might exist between (1) the standing of a pupil in one subject and his standing in other subjects, (2) the standing of a pupil during one year and his standing in succeeding years." Other interests were included in the investigation, references to which are made in the discussion on sex differences. The investigation was made at the high school of Urbana, Ill., through the courtesy of its principal, Mr. M. L. Flannigan. The records of pupils for the past six years were examined in order to select a group of pupils

whose study experiences had apparently been identical in all respects. Thirty-two pupils were thus found who had all enrolled in the Urbana High School in the fall of 1908 and graduated in the spring of 1912; who had studied algebra, civics, American history, geometry, Latin, and English under the same instructors during the four years; who had also studied English four years under the same instructors; who in other respects were as nearly alike mentally, physically, and morally as is possible among individuals.

The method of comparison observed the following plan. The 32 pupils were divided into four groups of equal numbers. If any correlation were evident, pupils of Group I in algebra, for example, would also be in Group I in civics. A perfect correlation would show that each group in each subject contained the names of the same pupils. Each pupil was given the same number in all the subjects. The composite table on facing page shows the results for each pupil in each subject, the Roman numerals referring to the groups.

Perfect group correlation is shown by 4, 5, and 8 of Group I; and by 27 and 32 in Group IV. Groups II and III lack complete correlation.

The investigators concluded: (1) that there is a correlation of excellence in the various subjects of study; (2) that the most perfect correlation exists among the brightest and among the most stupid children; (3) that the least perfect correlation exists among the pupils of medium ability; and (4) that it is rare for a pupil to represent both extremes of the excellence distribution. The detailed tables (not cited here) show the interesting facts that pupil 1 ranked first in algebra and American history, and pupil 8 ranked first in civics, geometry, and English (4 years). Pupil 4 ranked first in

TABLE IV. RANKS OF PUPILS BY SUBJECTS

PUPIL No.	ALGEBRA	CIVICS	HISTORY	GEOMETRY	LATIN	ENGLISH
1	I	I	I	I	I	II
2	I	IV	IV	I	II	III
3	I	I	II	I	I	I
4	I	I	I	I	I	I
5	I	I	I	I	I	I
6	I	II	II	III	III	III
7	I	II	II	III	III	II
8	I	I	I	I	I	I
9	II	II	I	II	III	II
10	II	I	II	IV	I	I
11	II	III	III	II	II	II
12	II	I	II	II	I	I
13	II	II	III	III	II	III
14	II	II	II	II	II	I
15	II	III	III	IV	II	II
16	II	I	I	II	I	I
17	III	II	I	III	III	II
18	III	IV	IV	II	III	III
19	III	II	III	III	III	II
20	III	III	II	I	II	III
21	III	III	I	IV	IV	III
22	III	IV	III	IV	IV	IV
23	III	III	IV	II	II	III
24	III	III	II	I	III	IV
25	IV	II	II	III	IV	II
26	IV	IV	IV	III	IV	IV
27	IV	IV	IV	IV	IV	IV
28	IV	IV	III	IV	IV	IV
29	IV	IV	IV	II	III	IV
30	IV	III	III	IV	IV	III
31	IV	III	III	III	II	IV
32	IV	IV	IV	IV	IV	IV

Latin but fourth in algebra, fifth in civics, third in American history, second in English (4 years), and tied with pupil 8 for first rank in geometry. Pupil 32 is colored. Of the 32 pupils numbers 17, 18, 22, 30, and 32 were most prominent in

athletics, all of these pupils being in the slower groups. But, on the other hand, pupils 1 and 3, ranking among the highest, were most active in other outside features of school life.

From this investigation it may be concluded that the born-short theory is not as formidable as some are led to believe. High ability is general. Excellence in one subject seems to indicate excellence in other studies. Mediocrity is also general, lack of ability not being confined necessarily to a particular subject, but evincing itself in practically all.

b. A Pupil "born Short." Dr. Jesse White, Dean of the Department of Psychology at the University of Pittsburgh, related to the writer a short time ago an experience with a young lady student of the University. She failed in mathematics and, on petition to the faculty to be excused from this requirement, was granted permission to drop the subject because she was unable after conscientious effort to complete the course. Later she enrolled for courses leading to the master's degree, selecting psychology as her major study. Dr. White suggested that she undertake the study of mathematics as an interesting experiment in psychology. The professor of psychology and the young lady who had repeatedly failed in mathematics went over the old ground of the subject. They met the difficulties that she had found insurmountable. By patient, thoroughgoing analysis of each difficulty the student gradually became embarrassed and finally in confusion admitted that her petition had been a mistake. She could have passed in mathematics. By careful "study-coaching" her apparent "born shortness" became a vain delusion.

This does not mean that all pupils can under the most favorable conditions attain to Group I. Differences there

are bound to be, but they are not as serious in this connection as many believe. The differentiation of school curriculums should not rest chiefly on a basis of pupils being wholly unable to pass this or that subject. Curriculums, it would seem, need reorganization largely on the basis of superior or average abilities. The bright pupils deserve a different treatment from the average or mediocre.

c. A Study of Pupils' Marks. The second part of the investigation under discussion is equally significant. The standing of the same 32 pupils during one year was compared with their marks during the successive years. English was chosen. The composite table on next page indicates the results.

It will be noted that perfect group correlation is shown by pupils 8, 4, 16, 12, and 10 in Group I, by 17 and 19 in Group II, by 20 in Group III, by 22, 29, 28, 27, and 32 in Group IV. Thirteen out of thirty-two pupils, nearly one third, were in the same group for four years. No pupil appeared in all the groups. The authors conclude that (1) there is a correlation of excellence in successive years of study; (2) the most perfect correlation exists among the brightest and among the most stupid children (I and IV); (3) the least perfect correlation exists in the medium group, representing students of average ability; and (4) never, so far as shown by their test, and probably very rarely in any case, does a pupil rank among the brightest students one year and among the most stupid another.

An additional conclusion of the authors deserves careful attention. "A more perfect correlation exists between excellence in one study during succeeding years than exists between excellence in various studies of different nature —

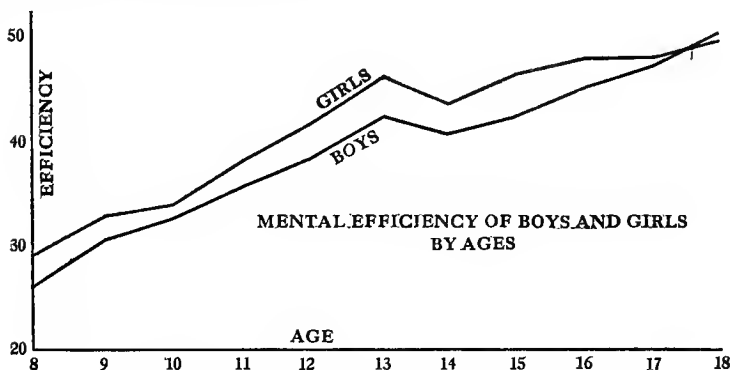
the same pupils appear in each group for both correlations, thus inviting the conclusion that, with the group studied, ability and stupidity are not only fairly constant in successive years of study."

TABLE V.—RANKS OF PUPILS IN ENGLISH COURSES

PUPIL NO.	ENGLISH 1	ENGLISH 2	ENGLISH 3	ENGLISH 4
8	I	I	I	I
4	I	I	I	I
5	I	I	II	II
16	I	I	I	I
3	I	I	II	II
12	I	I	I	I
10	I	I	I	I
14	I	II	II	I
25	II	II	I	II
1	II	III	II	II
9	II	II	I	II
17	II	II	II	II
11	II	II	III	III
15	II	I	I	II
6	II	III	III	III
19	II	II	II	II
24	III	IV	IV	III
2	III	II	IV	III
20	III	III	III	III
31	III	IV	IV	III
18	III	III	II	IV
7	III	III	III	I
13	III	IV	II	III
21	III	III	III	I
22	IV	IV	IV	IV
30	IV	III	III	IV
26	IV	III	III	IV
29	IV	IV	IV	IV
28	IV	IV	IV	IV
27	IV	IV	IV	IV
32	IV	IV	IV	IV
23	IV	III	III	III

3. **Differences in Ability according to Sex.** Various opinions are afloat concerning the relative abilities of boys and girls. Investigations in this field do not give as definite and final conclusions as one may desire and as doubtless will be possible in years to come. According to Netschajeff, boys are better able to learn objects directly perceptible, while girls prefer concrete experience. Lobsein concludes from his experiments that girls at all ages are superior to boys in all spatial memories (except unintelligible terms). The most striking differences between memories of boys and girls appear between the ages of eleven and fourteen. During this period girls show a superior memory-development to boys, but from the age of fourteen on boys overtake the girls. Lobsein found also that boys are superior to girls in all types of memory except that for real things.

a. *The Pyle Data.* Pyle¹ has found that girls between the ages of nine and fifteen (excepting age of eleven) possess a better memory for ideas than do boys. The following curve makes his conclusion clear :



¹ *Outlines of Educational Psychology*, 3d edition, p. 259.

Other investigators have found that boys develop memory for objects first; then words of visual content; next words of auditory content, sounds, terms denoting tactual and motor experiences, numbers, abstract conceptions; and lastly emotional terms. For girls the order of development is somewhat different; words of visual content, objects, sounds, numbers, abstract conceptions; words of auditory content, terms denoting tactual and motor experiences; and finally emotional terms.¹

b. The Monroe Data. In the investigation already cited Mr. Monroe found that "there is no evidence in support of the frequently expressed belief that girls excel boys in facility in algebra, for in three of the tests the average number attempted by the boys is higher than the corresponding average for the girls, and in the other three tests the conditions are reversed. In every test the boys showed superior accuracy."

c. The Minnick Data. J. H. Minnick² from an elaborate investigation concludes that "girls are the equals of the boys although they do not excel to the same degree in mathematics as they do in some of the other subjects, especially in language and English. In studying retarded pupils he reached results, some of which are represented in the following tables:

TABLE VI. — PERCENTAGE OF STUDENTS TAKING EACH SUBJECT RETARDED BY THAT SUBJECT

	MATHEMATICS	ENGLISH	LANGUAGE	HISTORY	SCIENCE
Boys	49.3	25.5	41.1	29.5	27.5
Girls	46.5	25.5	29.1	30.5	24.9
Differences . .	+ 2.8	00.0	+ 12.0	- 1.0	+ 2.6

¹ Rusk, *Experimental Education*, p. 82.

² "A Comparative Study of the Mathematical Abilities of Boys and Girls," *School Review*, Vol. XXIII, February, 1915, pp. 73-84.

The table shows that a smaller percentage of girls than of boys is retarded by mathematics. In the order of differences the subjects occupy the following positions: language, mathematics, science, English, history.

TABLE VII. — AVERAGE GRADES OF STUDENTS RETARDED IN ANY SUBJECT

	MATHEMATICS	ENGLISH	LANGUAGE	HISTORY	SCIENCE
Boys	77.9	77.4	63.7	79.7	78.4
Girls	80.5	80.1	71.1	76.0	77.0
Differences . .	+ 2.6	+ 2.7	+ 7.4	- 3.7	- 1.4

These and other tables show that in five points considered, the girls excel in two and the boys in three. "A smaller percentage of all girls than of all boys in the high school is retarded by mathematics, and the retarded girls have a higher average in mathematics than do the retarded boys; while, on the other hand, among the group of retarded students, mathematics seems to give more difficulty to the girls than it does to the boys."

The examination of pupils eliminated from the high school shows in Mr. Minnick's study that "mathematics does not seem to be a much stronger element in the elimination of girls than it is in the elimination of boys. A study of the relative achievements of boys and girls in the various subjects reveals the fact that the difference of achievements in mathematics is less than in English and in language."

Minnick's general conclusion from the investigation of records in a single high school are significant. He writes:

"We may conclude that taking the entire student body into consideration, the boys and girls do about the same grade of work in mathematics. Among the retarded students, mathematics has

given slightly more trouble to girls than to boys. Mathematics seems also to have been a slightly stronger factor in the elimination of girls than in the elimination of boys. When we compare the relative achievements of the girls with those of the boys, we find that the girls have done decidedly better in language and English than they have in mathematics, history, and science. However, if measured by ability to achieve, mathematics is about as well suited to girls as are history and science."

d. Frailey-Crain Data. In their investigation discussed in this chapter, Frailey and Crain found data that in the main confirm Minnick's. Their conclusions follow: (1) the average girl is as good a student in algebra and geometry as the average boy,—in fact, perhaps slightly better; (2) the average girl student excels the average boy student in Latin to a greater degree than in any of the subjects selected; (3) the average girl seems to be slightly more intelligent than the average boy or perhaps she goes less into outside activities and, therefore, gives more time to the preparation of her studies; and (4) in none of the six subjects does the average boy excel the average girl.

But in the scale of general attainments these authors found "that (1) boys are more likely to rank at the top of the grade scale and (2) that they are also more likely to rank at the bottom of the grade scale. In short, the generally accepted theory that the chances for either exceptional ability or exceptional dullness are greater among boys than among girls is borne out by our group."

General Conclusion. In the light of the foregoing data—representative of many others—it is hardly wise to draw any conclusion as to the relative abilities of boys and girls. What differences there are are so small and so easily reversed

that it would be hazardous to base any reorganization of class procedure on the ground of sex alone. Abilities, it may be said, differ among *individuals*, not between the sexes. Probably it is unnecessary, in the light of present data, to have groups in classes segregated on the ground of sex. Boys and girls may well work together in all groups.

II. INDIVIDUAL DIFFERENCES IN IMAGE TYPES

Quite recent investigations point to the fact that people differ from one another in the way they receive mental impressions. In school pupils do not receive instruction or suggestions by similar mental reactions. Colvin¹ discusses at length the nature of the various kinds of images and calls attention to the fact that there is at present a tendency to abandon the doctrine of image types. As will be seen later in this chapter, however, there is evidence that high school pupils "possess a greater vividness of imagery in one sense department than in others," although it is highly probable that most persons belong to a mixed type "with predominating types for certain classes of sensory or verbal material."

The significance of this condition becomes clearer by a simple classification or analysis. People who learn and recall experiences by a distinct mental picture of them are called *visuals*. They possess a *photographic* mind. In school such pupils can see the picture of the page from which they are reciting. Whatever is written on the blackboard is remembered with comparative ease. But other persons recall only with difficulty what they have read or seen. They find it easier to remember what has been said or read to them.

¹ "The Nature of the Mental Image," *Psychological Review*, Vol. XV, 1908, pp. 158-168, and *The Learning Process*, 1911, pp. 105-115.

Their type of mind might be called *phonographic*. There is a third group of individuals who depend less upon vision and hearing and principally on "muscle memory," on subtle impressions that are reproduced by muscle feeling. They are the *moteurs*, the *motor minded*.

Persons depending on visual memory find it easy to remember colors, forms, position of objects with considerable accuracy. They can vision the location of words on a page, lists of names, numbers, etc. Written examinations and book work are easy for this type. The *audiles* or *ear minded* retain sound impressions and reproduce them readily in sound, in form, or by some other means. Others, again, learn by doing, by acting out for themselves what they have read or have been told. The last named employ principally kinæsthetic imagery, *i.e.* muscle images.

William Chancellor¹ reports an investigation on image types among school people. A study of the following parallel outline shows some of his results:

TABLE VIII. — IMAGE TYPES

ELEMENTARY PUPILS UNDER 12 YEARS OF AGE		HIGH SCHOOL PUPILS	
Image Type	Per Cent	Image Type	Per Cent
Notably auditory . . .	55	Notably auditory . . .	8
Notably visual . . .	15	Notably visual . . .	60
Superior auditory and visual	13	Superior auditory and visual	16
Mediocre auditory and visual	18	Mediocre auditory and visual	12
Inferior auditory and visual	4	Inferior auditory and visual	4
Greatly deficient auditory and visual	3	Greatly deficient auditory and visual	0
Virtually imbecile in these senses	1	Virtually imbecile in these senses	0

¹ *Journal of Education*, April 29, 1915.

The table shows that children under twelve learn more easily by hearing or by being told, while high school pupils learn more readily by reading or by seeing the data to be learned. Chancellor refers to the case of his oldest daughter. He says:

"She always did well the second time she went through a subject, which occurred in unhappily numerous cases, and especially where the teacher was a good expositor and did not rely upon books. In college work, she secured the highest kinds of marks with the brilliant lecturers, and by no means such marks with the men who gave immense amounts of reading to do. She got on well in quizzes, and but poorly in written examinations. She plays the violin. And that was the key to the case. She was discovered to be highly auditory and notably non-visual."

Another case cited by Chancellor illustrates a second type:

"My next case to be closely studied was that of a newspaper reporter. In two days' examinations, I proved to his city editor that he ought to be considered a criminal in employing him to report oral interviews. This reporter was an almost perfect visualist and extremely rapid writer. But he could not remember a sentence of eight words thirty seconds after hearing it. On the other hand, in one hundred and twenty seconds, he could easily memorize thirty words of either prose or verse. He admitted that he never dreamed conversations nor hummed tunes."

These illustrations, interesting for the information they contain, are suggestive of what is necessary in the high school. Block or mass teaching cannot give sufficient attention to varying mental types. It should be noted, however, that the employment of two kinds of teaching, for example, the visual and the oral, is less effective than using only one. It has been found, to be more specific, that the teacher makes a mistake if using the blackboard and employing the oral

method during the same period and for the same group. Chancellor, in the study already discussed, suggests reorganizing the class into at least three groups: the visual, the auditory, the mediocre or worse in both types, and giving each group the kind of instruction best adapted to its type of mind. This can be done in the supervised study period discussed in another chapter.

Attention should be called to the fact already hinted at, that probably there are no pure mental types. On the other hand, there are what Meumann classifies as object types, including minds readily stimulated by any sense organ, and word types with the combinations of verbal-visual, verbal-acoustic, verbal-tactile, and kinæsthetic types. Colvin¹ cites as illustration of the object type the reviving of the appearance of a rose—a concrete visual image; recalling its odor—a concrete olfactory image; recalling the sensation of touching its petals—a concrete tactile image. To recall the movement of drawing away from the thorns on a rosebush would be a concrete motor or kinæsthetic image. But if one thinks simply of the word “rose,” there is a verbal image; to remember the exact place on the page where “rose” is printed is a verbal-visual image. If one recalls the name “rose” as having been spoken by some one, the experience is called a verbal-acoustic image. Again, a verbal-motor image consists of recalling the word “rose” in the terms of throat movements used in pronouncing it or the terms of muscle movements used in writing the word on the blackboard or on paper. Some people think of a word as they would write it. This is a verbal-motor image. Colvin suggests that the latter kind of images usually arise in company with verbal

¹*Op. cit.*, pp. 107, 108.

speech-motor images. He says: "Attempt to spell a word merely by forming the letters with a pen or pencil, and you will find yourself probably either actually pronouncing the letters or reviving images involved in pronouncing them."¹

This phase of individual differences must not be discussed without a well-deserved reference to "the other side of the story." Thorndike² in criticizing the doctrine of multiple types says:

"Fact showed opinion to have been grossly in error as a result of its assumption that distinct types of some sort there must be. The contrary is true. Instead of distinct types or many 'mixed' types, there is one type — mediocrity. Instead of antagonism between the development of imagery from one sense and that from other senses there is a close correlation."

In support of his position Thorndike considers some arguments in favor of the single-type theory. These in substance are: (1) Exact measurements favor the single-type theory. Advocates of the many-type theory have failed to use the exact measurements employed by defenders of the single-type theory. (2) There are really only a very few instances of one type excluding another type of mind. (3) "Satisfactory proof of the existence of a distribution of human individuals after the fashion demanded by the multiple-type theory has never been given in a single case, and the evidence offered by even the most scientific of the theory's adherents is such as they would certainly themselves consider very weak if they were not certain that types of some sort there must be."

¹ Teachers should study carefully this subject of image types as discussed, for example, by Colvin in *The Learning Process* or by Colvin and Bagley in *Human Behavior*. The latter volume is an excellent introduction to the study of psychology.

² *Educational Psychology*, Vol. III, Chapter XVI, p. 374 ff.

Thorndike's position seems to be that individuals vary gradually from a single type called mediocrity — some reaching an extreme brilliance, others extreme deficiency. There are probably no pure or exclusive types, but instead a long series of overlapping traits. Consequently, grouping by topics is practically impossible. Chancellor's study, however, seems to supply data that make the multitype theory at least worthy of more investigation and consideration in dealing with individual pupils. A study of biographies, as, for example, those of Poincaré, the mathematician, and of Zola, suggests to the writer that wide differences of types of mind are illustrated in these men. In the chapter on "Methods of Studying," Rickard's investigation also suggests individual differences of mental type.

Summary. There is enough evidence supporting the doctrine of image types to warrant teachers noting these differences and applying methods of individual instruction suitable to each type. It is likely that three divisions of such types would be ample.

III. DIFFERENCES OF CHARACTER AND DISPOSITION, ETC.

It is quite impossible to deal adequately with the pupils unless one understands something of their dispositions and takes these into careful consideration when judging their work or attitude toward school life. The following suggest the kinds of analyses necessary under this head :

1. **An Illinois Scheme.** The following plan was suggested at a seminar in the University of Illinois. The phases bearing on our topic embrace several considerations.

PROPOSED SYSTEM OF ADVICE AND GUIDANCE FOR JUNIOR AND SENIOR HIGH SCHOOLS

I. Begin with seventh grade and continue through the high school.

II. System of "Teacher Advisors." Men for boys, women for girls, 25 pupils to advisor (or more if enough good advisors cannot be found on plan suggested). Appoint at beginning of school year. Provide for it on daily program, if possible, crediting it on teachers' daily schedule. Get local and other public men and women to address these advisors throughout the year.

a. To conduct an industrial survey of the city by the pupils from observation, visits, etc., including in reports the kind of industry, people employed, wages paid, moral conditions and dangers, health conditions, possibilities of advancement, etc.

b. To compile card index of individual health, mental traits and interests, family traits and occupations, social conditions, and expectancy in years of schooling of all pupils as follows:

INDIVIDUAL TRAITS

Card Index (to be recorded by numbers)

- | | | | | | | | | |
|--|--|------------------|---|---------------------|--------------------|---------------------|----------------|-------------------------------|
| 1. Name | School | | | | | | | |
| Date of birth | Nationality | | | | | | | |
| Parents' name | Residence | | | | | | | |
| Health and physical characteristics (from the physician) | <table border="0"> <tr> <td>Height</td> <td rowspan="3"> <table border="0"> <tr> <td>Eyes</td> </tr> <tr> <td>Ears</td> </tr> </table> </td> </tr> <tr> <td>Weight</td> </tr> <tr> <td>Sense organs</td> </tr> </table> | Height | <table border="0"> <tr> <td>Eyes</td> </tr> <tr> <td>Ears</td> </tr> </table> | Eyes | Ears | Weight | Sense organs | |
| Height | <table border="0"> <tr> <td>Eyes</td> </tr> <tr> <td>Ears</td> </tr> </table> | Eyes | | Ears | | | | |
| Eyes | | | | | | | | |
| Ears | | | | | | | | |
| Weight | | | | | | | | |
| Sense organs | | | | | | | | |
| 2. Character | <table border="0"> <tr> <td><i>a.</i> Prompt</td> </tr> <tr> <td><i>b.</i> Responsible</td> </tr> <tr> <td><i>c.</i> Impulsive</td> </tr> <tr> <td><i>d.</i> Careless</td> </tr> <tr> <td><i>e.</i> Shiftless</td> </tr> <tr> <td><i>f.</i> Lazy</td> </tr> <tr> <td><i>g.</i> Habit-forming power</td> </tr> </table> | <i>a.</i> Prompt | <i>b.</i> Responsible | <i>c.</i> Impulsive | <i>d.</i> Careless | <i>e.</i> Shiftless | <i>f.</i> Lazy | <i>g.</i> Habit-forming power |
| <i>a.</i> Prompt | | | | | | | | |
| <i>b.</i> Responsible | | | | | | | | |
| <i>c.</i> Impulsive | | | | | | | | |
| <i>d.</i> Careless | | | | | | | | |
| <i>e.</i> Shiftless | | | | | | | | |
| <i>f.</i> Lazy | | | | | | | | |
| <i>g.</i> Habit-forming power | | | | | | | | |

Supervised Study

- | | | |
|---|---|--|
| 3. Intellectual capacity | { | <ul style="list-style-type: none"><i>a.</i> Able<i>b.</i> Bright<i>c.</i> Average<i>d.</i> Dull |
| 4. Intellectual habits
and characteristics | { | <ul style="list-style-type: none"><i>a.</i> Studious<i>b.</i> Industrious<i>c.</i> Irregular<i>d.</i> Lazy<i>e.</i> Original<i>f.</i> Matter-of-fact<i>g.</i> Accuracy<i>h.</i> Endurance<i>i.</i> Strength<i>j.</i> Quickness<i>k.</i> Adaptability |
| 5. Attention | { | <ul style="list-style-type: none"><i>a.</i> Flexible<i>b.</i> Wandering<i>c.</i> Persistent under difficulties |
| 6. Special interests | { | <ul style="list-style-type: none"><i>a.</i> General interests<i>b.</i> Bookish interests<i>c.</i> Mechanical interests (machines, etc.)<i>d.</i> Laboratory interests<i>e.</i> Artistic interests<i>f.</i> Nature interests<i>g.</i> Indifferent interests |
| 7. Social capacities | { | <ul style="list-style-type: none"><i>a.</i> Companionable<i>b.</i> Leader<i>c.</i> Follower<i>d.</i> Love of game and physical skill<i>e.</i> Love of indoor games |
| 8. Habits | { | <ul style="list-style-type: none"><i>a.</i> Habits made<i>b.</i> Habits broken<i>c.</i> Good habits at present<i>d.</i> Bad habits at present |

3. **Bagley's Classification of Troublesome Cases.** In his book on *School Discipline*¹ Dr. Bagley classifies pupils into the following groups:

- | | |
|-------------------------------|------------------------------|
| a. The stubborn pupil. | e. The morose pupil. |
| b. The haughty pupil. | f. The hypersensitive pupil. |
| c. The self-complacent pupil. | g. The deceitful pupil. |
| d. The irresponsible pupil. | h. The vicious pupil. |

The list is suggestive of what must be done in dealing with high school boys and girls. The following tentative analysis is offered with the hope that other lists may be devised for publication and eventual standardization.

4. **A Tentative Analysis of High School Pupils' Dispositions as related to Studying.** While serving as study-coach the writer had many opportunities to note wherein pupils differ from one another in their attitude toward school life. He found the following types:

a. The timid pupil — easily misjudged; hesitates to assert his rights.

b. The overconfident pupil — likes to be prominent; may resent explanations.

c. The impulsive pupil — sees things at once but superficially.

d. The careless pupil — unreliable in details.

e. The industrious but not brilliant pupil — deserves recognition.

f. The brilliant but lazy pupil — should be warned.

g. The all-round pupil — can and does learn easily.

h. The resentful pupil — low marks or criticism offend him.

i. The indifferent pupil — an enigma often; hard to arouse, seek for his chief interest.

j. The artistic pupil — very neat.

k. The social pupil — prefers clubs and social life in general.

¹ Macmillan, 1915, Chapter XIII.

The foregoing analyses illustrate that the classroom is made up of a heterogeneous number of individuals who must be adjusted to some group conformity. It should not be expected, however, that complete adjustment is possible, even if it were desirable. Individuals need to be adjusted, but this harmonizing with group standards must take place by leading each individual according to his type of responses.

5. The Detroit System of Records. The following blank is used by the Liggett School of Detroit, Mich. A report of the system describes its details as follows in tables on p. 60.¹

This blank is filled out for each individual and serves first to give a large body of detailed information with regard to the pupil's work. Second, it permits a comparison of the pupil with himself rather than with other members of the class. Such a report is filed in the principal's office every two months and is made the basis of conferences and interviews with the pupil and his parents.

A somewhat different blank is used in sending notices to parents. This blank contains the following statement by way of explanation of the record. "Our system of reports is based on the conviction that a teachers' judicious recognition of success and failure, of cause and effect, of effort and achievement, is helpful to the workers. So far as possible we wish to destroy the habit of competition with others and establish a true conception of the value of self-management." This home report then gives for each study taken by the pupil a statement of the pupil's achievement, preparation, attitude, deportment, and attendance. The filing and handling of these reports involves somewhat more labor than is represented in conventional pupils' reports. There can be

¹ *School Review*, 1915.

Supervised Study

Year _____ Months of Sept. and Oct. Name _____

Study _____ Grade _____ Instructor _____

A. GENERAL SUMMARY

ACHIEVEMENT	EFFORT	ATTITUDE	INCLUDED IN THIS REPORT	
			No. Lessons	Interviews
			Absence	Made up

B. DAILY WORK IN EXPLANATION OF ABOVE

CLASS WORK			WRITTEN WORK	
Preparation	Attention	Deportment	Promptness	Form

HABITS			IMPROVEMENT	
Study	Attack	Correction	Shown in Daily Work	Shown in Tests

FIGURE II

no question, however, as to the wisdom of enlarging school reports, and this elaborate example may serve to stimulate the adoption of similar plans elsewhere.

GENERAL SUMMARY

The foregoing discussion has stressed the importance of dealing with individuals from the standpoints of their native capacities in responding to class duties, in dealing with particular subjects, or in regard to sex differences; their image types, *i.e.* their peculiar type of mental reaction, dominantly visual, auditory, or motor; and their dispositional attitudes. Individuals are not to be dealt with to the neglect of group coöperation, but the latter becomes more harmonious and efficient if the teacher understands what mode of procedure is most successful in bringing each individual to the maximum development. It has been suggested throughout the chapter that these various individual traits should be considered in judging the pupil's progress or the kind of method best adapted to his finest development.

CHAPTER IV

PROPER CONDITIONS OF AND HINDRANCES TO STUDYING

I. THE SIGNIFICANCE OF FAVORABLE CONDITIONS

ONE frequently reads of the hardships endured by famous characters during their preparatory days, of how they studied and worked under conditions of squalor, ill health, and mental disturbances bordering on insanity. Reference to such conditions is made as a sort of stimulus to overcome various kinds of limitations and in the process of overcoming the acquiring of qualities of greatness and worthy responsibility. Doubtless such a message has an important place in education. The significance of heroic examples should never be minimized. Galileo, Schiller, Franklin, Wordsworth, Edison, immortalize faith, industry, and grit. Without these elements of power intellect is like an unharnessed force of nature, running ever to waste.

It will not be denied, however, that significant as hardship and experience must be, they are also tremendously expensive. Probably friction can never be wholly removed. One of the alluring problems of physics, as we all know, is just this minimizing of friction. Hardships, the stimulus of difficulty, the incentive of mastery, are invaluable; but in the life of the pupil who earnestly strikes for great achievement they will

become more meaningful and more glorious under conditions that give them, so to speak, a more favorable and strategic battle ground. In other words, under whatever conditions the pupil studies, his task must be considerably difficult. Learning is not easy. It implies, it demands perseverance, ingenuity, grit. This is true even under the sanest program of the doctrine of interest. But the purpose of this chapter is to stress the importance of surrounding effort and good-will with conditions most favorable for their exercise. Effort for its own sake is a doubtful doctrine anywhere, even in physical training, but effort under certain advantageous conditions reduces friction and waste, and conserves energy, time, and hope.

II. CONDITIONS OF STUDYING CLASSIFIED

For convenience of discussion and application the essential conditions of studying may be grouped as follows: *physiological*, including the large topic of health with its requisites of nourishment, sleep, and exercise; *physical*, embracing some of the fundamentals of school hygiene, and certain items relating to the pupil's study room at home; *psychological*, involving amount of time for studying, mental tone, moods, etc. Students of the science of education will recognize the foregoing topics. They are introduced here because they are as intimately related to the student's life as they are to class management or to the teaching process in general. It is fundamental in successful teaching that everything pertaining to school life cluster around the student. All school work should be viewed from the place of the one taught. The foregoing classification therefore aims to focus attention primarily on those conditions that are intimately related to the study life of young people in high school.

1. **Physiological Conditions, including Health.** The old adage, "a sound mind in a sound body," like many other wise sayings, has been challenged by notable exceptions. Pope, Coleridge, Carlyle, Milton, Poe — to mention only a very few — were far from sound in body, and yet their literary productions rank among the world's treasures. Ill health sometimes becomes a powerful driving force, urging the mind to masterful victories. There can be no gainsaying the fact that ill health and physical deformity are not always visible impediments of success. Marshall P. Wilder, in spite of his dwarf-like figure and crippled form, scattered sunshine into lonely huts and austere palaces of kings. Steinmetz, another dwarf, and seriously handicapped physically, rivals Edison in the electrical domain. But it is unsafe to generalize from a few and altogether unusual exceptions. In the very nature of things, health is essential to the best effort, for health simply means the largest amount and finest quality of work of which the individual is capable.

a. What Health Means. Without attempting or referring to a technical definition, it is important that students and teachers should know that essentially health means a well-balanced organism. The process known as metabolism consists of two main functions: one, called anabolism, builds up the body by feeding, sleep, and recreation; the other, termed katabolism, tears down the organism by work, disease, or the lack of those agencies that restore it. The nervous system receives its strength and resiliency from the well-balanced body. Good blood circulation and normal digestion with its allied functions mean vitality, the source of effort. The building up or anabolic process serves to stimulate the nervous system to resume alert charge of the organism. Overstimu-

lus of the nervous system causes it to work too hard, *i.e.*, to produce more in a shorter amount or equal amount of time than normally it should be required to do. Hence, the overstimulated nerves use up energy faster than the strength of the abnormal stimulus can supply it. The result is that exhaustion sets in earlier and more completely.

The ultimate effect of stimulants consists in the nervous system requiring this unusually strong means of excitement. The using up of energy by the nervous system gradually implies that the stimulus or the stimulant must become correspondingly stronger. Normal stimuli, such as food, sleep, and recreation, under these conditions have long since become inadequate, because less intense and rapid in their effects. Ultimately the organism craves the once unusual and now the only effective sting to work. The use of tobacco among high school boys cannot be too strongly denounced. Nicotine, like every stimulant, is also a narcotic. It stimulates only to depress a little later on. There are investigations a-plenty to show that tobacco users, especially in high school, are about 15 per cent less efficient than others. Cigarettes are much more harmful than cigars or pipe, but all forms of tobacco for growing boys (need we add girls?) are injurious to physical growth, reliability, endurance, and alertness. Similar prohibition must be placed on the use of coffee, tea, and certain drinks at the soda fountain. The growing boy and girl must give eager nature a right of way toward sturdy forms and control of the nervous system. It is important, therefore, that students attend to the normal means of exciting physical and mental effort. These are:

(1) *Food*. Among the several "new movements" in modern education none is more significant than the Domestic

Science curriculum. Food is now studied in its chemical relations in a way similar to the analysis of soil fertilizers, for example. Certain foods contain certain chemicals. The body needs this or that kind of food for producing fats and tissues. Food chemistry enables the well informed to select those foods that serve in the capacities required. By means of food nervous and muscular energy are supplied. There is, however, *no special food* for either muscle or brain development. Here, as in other fields, superstition has wrought much harm; fish, for example, being called a brain food. Eating is important from two standpoints: quality of food and time of eating.

(a) *Quality and Amount of Food.* Foods are divided into proteins or tissue-building and carbohydrates and fats or the energy-producing kinds. Proteins or tissue builders are found chiefly in the animal kingdom and include meat, eggs, cheese, milk, dried peas, beans, and lentils, some of the grains as rolled oats (on which the Scotch are said to have developed brain and brawn), and finally nuts. The latter produce also heat and energy, but are rather expensive. The heat and energy producers embrace sugar, the fats and oils, bread, cereals, vegetables, and fruits. A well-balanced dietary should include all of these. There is no general agreement concerning the proportion needed. Vost and Atwater favor the first groups — the proteins or tissue builders; more recent physiological thought, led by Chittenden,¹ advocates a smaller per cent of tissue builders. In plain language this means less meat. It is commonly agreed that *meat once a day* is sufficient for students and people generally. Many sustain robust health with-

¹ See Chittenden, *Nutrition of Man* and *Physiological Economy in Nutrition*; Hutchison, *Nutrition and Dietetics*; Sherman, *Chemistry of Food and Nutrition*; Thompson, *Practical Dietetics*.

out any meat at all, but to do so requires some knowledge of food values in order to obtain a balanced ration. It is doubtful, however, if pure vegetarianism should be insisted upon for high school pupils.

Well-cooked cereals are excellent food for adolescents. It has been found by students of the subject that fresh fruits and vegetables are necessary to supply organic acids, mineral matter, and bulk, essential to normal peristalsis and also to a certain amount of energy. Recent investigation has shown that the organism needs an abundance of mineral matter, especially the phosphates, calcium, and iron as found in fruits and vegetables and also in the milk and egg foods.

Dearborn, in "The Sthenic Index of Education,"¹ discusses at length the chemical composition of nerve nutriment. He writes :

"Many things of late have combined to suggest that the proper nutrition of the nerve cells of the central neural axis depends especially on the phosphatids. These are complicated substances belonging to the class of lipoids and consist of carbon, hydrogen, oxygen, nitrogen, and phosphorus. These are fat-like compounds but more complex than the fats. They are phospharized and nitrogenized fats, and, therefore, are highly unstable substances with abundant calory value for their own essential purposes. Perhaps herein lies the solution of humor of moderately fat people — worry is allied to discouragement. Worry uses up nerve energy at the maximum rate and rapidly consumes the general body fat whether it does the lipoids and the chromatin of the brain cells or not."

Dearborn says further that efficiency depends upon brain and muscle nutrition, internal secretion, muscular adroitness, the heartrate, the blood pressure, the humidity and sunlight.

¹ *Pedagogical Seminary*, Vol. XIX, pp. 166-185, 1912.

Euphoric conditions produce a certain balance, consisting of harmonious interplay between the central nervous system (brains and spinal cord) and the peripheral nervous system. Euphoria or well being is defined also as a delicate "balance action of opposed functional groups of muscles with kinæsthetic sensations as its essential consciousness." Skill depends on this balance of energy, as Book points out. MacDougall states :

"The conception toward which the study of the organism as a whole points is that the neurones of the afferent side of the nervous system (including the cerebellum) constitute a great common reservoir of free energy, in which the head of pressure varies from moment to moment with the ratio of inflow to the outflow and on which all afferent paths may draw in turn when they come into activity. This reservoir of free energy is the tension, neural and muscular, represented in the effort of exact voluntary control inherently kinæsthetic and inhibitory."

When one considers the far-reaching importance of the science of eating in its relations to efficiency in studying, it is surprising that so little attention was given until recently to this phase of school life. One ventures the suggestion that in the organization of the program of studies in the high school one of the new requirements should be this very subject of health with emphasis on the science of nourishment.

The *amount of food* is another vital question. As a rule, adolescents are hearty eaters. The physical growth of the body and the incessant activity of the individual demand a liberal supply of nourishment. The high school pupil needs only too frequently more than can be contained in the lunch-box. School cafeteria supplement the home supply, but poor pupils who cannot afford even the small price of these school luncheons are at a serious disadvantage. Complete satisfac-

tion in eating, however, should not be aimed at. Fletcher has suggested that one should leave a meal feeling able to eat more. Eating to the point of full satisfaction, as, for example, at a large Thanksgiving or Christmas dinner, produces sluggishness and drowsiness, both of which are hindrances to studying. An interesting collection of individual peculiarities in this matter of the amount of eating has been made.

Mohammed needed only a handful of dates and a mouthful of water after a day of hard riding. Pope Pius IX required only an egg and a piece of bread for breakfast. Michael Angelo most of his life subsisted on the plain food of an Italian peasant. Leonardo da Vinci was satisfied with bread and oranges. Francis Bacon never ate more than one or two simple dishes at a meal. Locke believed that students should eat a piece of fish for breakfast, while Raphael lived principally on figs and raisins and other dried fruits with bread. Extremes of a wholly different type, however, were Peter the Great who enjoyed baked goose stuffed with apples; Fielding whose "heaven's own food" consisted of tarts with currant jelly; Ben Jonson who doted on pork pie with an abundance of Canary wine; Macaulay who thought that plain roast beef and potatoes were fit for any man. Henry VIII with consistent proclivity for exaggerations in life ate himself drowsy on a haunch of venison. Walter Scott preferred venison and potatoes to any other dishes. Frederick the Great was German enough to prefer cabbage with salt beef and pork.

School feeding is now so common in large high schools that it promises to become universally an integral part of the secondary school system. The menus at the school luncheons are, of course, not intended to serve as completely satisfying meals, but to the layman it is quite astonishing how effective these luncheons have proved to be. The following *Three-cent Meal* is typical.

TABLE IX. — TYPICAL THREE-CENT MEALS

MEAL NO.	CONTENTS OF MEAL	FOOD VALUE IN CALORIES
1	Cocoa, apple butter, 2 dates, sandwich, 1 graham wafer	439
2	Rice pudding with raisins, bread, 1 pretzel, 4 stewed prunes	400
3	Bean soup, bread, 1 milk lunch, 2 stewed peaches .	485
4	Clam chowder, bread, 1 graham wafer, 1 banana .	400
5	Baked beans, bread, 1 pretzel, 5 stewed prunes .	425
6	Macaroni with tomato sauce or macaroni with hamburger steak and brown bread, milk lunch, gravy, small orange	410

These luncheons are interesting because of their selection, their food values, their variety, their quantity, and the remarkably low price of three cents. Practically all children economically able to attend a school can buy such lunches.¹

(b) *Time of Eating.* A few years ago an experiment on indigent children in Boston was carried on by feeding them at noontime and morning on proper nutrients. In a short while they showed marked improvement. It was the supplying of proper food at the proper time that wrought the change. Fletcher and others have advocated eating whenever the organism craved food. Stated hours of eating, it is claimed, are arbitrary and may prove harmful. It would be impossible, however, to carry out such a régime in high school. In some schools the luncheon hour is not the same for all classes, but approximately all classes lunch between twelve and one. The social value of such group lunching should not be minimized. Often the meal itself stimulates a sluggish appetite, and the individual finds that the feeling of "no appetite" vanishes

¹ W. S. Cornell, *Medical Inspection*, 1912, p. 100.

before tempting dishes. Regular meals have the added value of being rest periods, pauses in the day's work. Again, they serve to regulate the program of the day, giving it a certain systematic procedure, in itself important to the successful pupil.

Regularity of eating involves also *sufficient time for eating*. The average Cornell student, it was found, three years ago, devoted 1.40 hours a day to meals; President Shurman's recommendation being two hours a day. A large number of students spent less than an hour and a half a day at regular meals. Doubtless, high school pupils do not spend as much time as this. With the activities, social and intellectual, accumulating at this time, eating is a hurried necessary formality, supplemented by a midnight lunch, a chafing-dish party, or a lunch-counter vigil. Digestion and nourishment must suffer under such conditions and in turn cause serious indifference toward school work.

(2) *Sleep*. An interesting and startling opinion on sleep was given by Mr. Edison some time ago¹ in the following words:

"In the old days man went up and down with the sun. A million years from now he won't go to bed at all. Really, sleep is an absurdity, a bad habit. Humanity can adjust itself to almost any circumstances. Not so very long ago we had a good deal of trouble here in the factory while we were trying to perfect the disk record for our phonographs, and it was plain enough to me that one reason for it was that our work was too much interrupted by the daily routine of our lives. We had made up our minds that the trouble had to end, and that it would really not get something approaching undivided attention until it did end. Eight of us then started upon the work with very definite intentions of wasting just as little time as possible. For five weeks we put in from 145 to 150 hours

¹ *New York Times*, Sunday, October 11, 1914, Section 4.

a week each at the job. One hundred and fifty hours a week means more than twenty-one hours a day . . . we all gained weight. . . . The average man who sleeps seven or eight or nine hours daily is continually oppressed by lassitude. If he sleeps only four or five hours daily, he feels as clear as a bell and full of energy when he wakes up, and when he goes to bed he is sufficiently tired so that he will certainly sleep well, but it takes a month or two to acquire the habit."

Edison, former President Harper of the University of Chicago, and Napoleon are famous among short-hour sleepers. Napoleon found that two or three hours' sleep sufficed. These are adults, however, and ambitious Edisons and Harpers in high school must bear this in mind. Furthermore, it is a matter of history that after Napoleon had adopted the brief schedule of sleep, he divorced Josephine, invaded Russia with the tragic return from Moscow as a result, and at last met defeat on Waterloo. He had lost his control, his shrewd judgment, his power of endurance. Dr. Duke¹ offers the following schedule of sleep for adolescents :

TABLE X. — SCHEDULE OF SLEEP

AGE	HOURS OF SLEEP
12-14	10½
14-16	10
16-18	9½
18-19	9
19-21	8½
21-23	8

Some have said that of all rooms *the bedchamber* is most important and usually the worst planned. Sleeping quarters

¹ *Teachers' Encyclopædia*, Vol. IV.

should be commodious, with high ceilings and wide windows, which should be open from the top at least a foot. If sleeping porches are available, they should be used, providing there is ample bedding.

Bright, dainty, plainly furnished bedchambers with cheerful pictures and small rugs — not carpets — are the most desirable. In homes where these conveniences are prohibitive, the rooms should be at least well ventilated all day long. This is possible in almost every home. Sleeping hoods are now available for those who can afford them. In country districts the instinctive desire of boys to sleep in tents should be respected under proper vigilance. Too much time cannot be spent out of doors, and the habit of sleeping either out of doors or what amounts to the same thing, on sleeping porches, should be strongly recommended.

(3) *Recreation.* Good studying depends also on a sound body developed by wholesome exercise. This does not mean violent or frequent recreation, as only too often characterizes athletics. It does mean daily and moderate enjoyment of life in the open by long walks, various kinds of games, like tennis, track, golf, lacrosse, baseball, and football. The amount of time and money spent on gymnasiums has doubtless been exaggerated. Basket ball outdoors is better than indoor playing. Artificial means of exercising, while important under certain conditions, should be regarded as makeshifts. Outdoor life, with its many forms of activity, its diversions of hunting, horseback riding, swimming, motoring, canoeing, rowing, sailing, yachting, and skating, is far superior to dumbbells and crossbars. In cities where country-life advantages are difficult to procure, the gymnasium is the best substitute. The pool provides aquatic pastimes, less spectacular, and ex-

hilarating than the surf, but interesting, and as a recreation very effective.

Physical directors need to be men of wise discrimination. In many universities they are physicians — one feels that everywhere this important office should be filled by a physician. The danger of overexercising, overexertion even in normally harmless forms of “gym” work, makes urgent the demand that each and every high school pupil undergo a thorough physical examination before being permitted to engage in any recreational exercise. The school health inspection crusade has already won wide territory. It deserves universal indorsement and adoption.

Mr. N. C. Johnson in an investigation of how high school pupils study ¹ gives the following table which has interest in this connection. The top numerals refer to high school classes.

TABLE XI. — GAME OR RECREATION TENDING TO PUT ONE IN GOOD
CONDITION FOR STUDY

	1	2	3 ¹	4	TOTAL
Walking	59	11	17	11	98
Bicycling	37	9	19	6	71
Driving	16	2	4	4	26
Baseball	12	5	3	1	21
Music	5	1	4	5	15
Tennis	5	1	2	2	10
Gymnastics	4	2	4	0	10
Running	5	4	0	0	9
Work	4	0	1	1	6

It is a serious mistake to seek mental recreation by hard physical exercise. Too much physical exercise is exhausting and unfits one for serious concentrated study.

¹ *School Review*, Vol. VII, No. 5, May, 1899, p. 268.

2. **Physical Conditions.** The reader will bear in mind that the thesis of this book maintains that supervision of study implies the supervision of the whole individual and his environment. Study is most effective, it is maintained, under conditions that further the best intellectual effort. For this reason it is necessary to consider some of the more fundamental phases of school hygiene as related more particularly to the physical conditions of the pupil's environment. The conditions of light, heat, and ventilation must be here viewed in their relation to studying.

a. *Light.* A few simple rules based on careful investigations direct that in the daytime the pupil's desk, in school or at home, should be placed so that the light falls over his *left* shoulder. This simple rule is widely disregarded at home. Its importance is obvious, for, inasmuch as the majority of people are right-handed, light from the left strikes the hand in writing or the book in reading without any shadow falling on the paper or the book. Furthermore, the light does not enter the eye directly as it does when the desk faces the window. Modern school buildings provide for this hygienic condition of lighting by windows on the left of every classroom, no windows in the front of the room, and rarely any in the back of the room. This accounts for the large bare walls in the architecture of new school buildings.

It is important that similar rules be observed with artificial light. At night, however, it is often impossible to arrange the lighting facilities so conveniently. The gas jets are too high, the electric bulbs are not handy. The best substitute under such conditions is either to place the table or desk near the source of illumination so that the light comes from the left, or to wear a green eye shade. By the latter means the rays of

light are prevented from striking the eyes directly. It should be noted also that when lying down to read the light should be back of one's head, and to the left, never directly in front of the eyes with the book serving as a shield.

The *quality of light* is equally important. Flickering gas jets and yellowish electric light are plainly to be avoided. Some students of maturer age find that the old-style easily portable student lamp with green shade is still unexcelled. Its light is white and steady. It can be adjusted to suit various kinds of type or paper. It can be placed at convenient range. The same results, of course, are possible with the electric reading lamp, providing its shade is not too large or too high.

Personal preference will determine whether or not the study-room at home should be brilliant with illumination or subdued with only a soft light near the one at work. Whatever may be one's preference in this matter, it is important to avoid dazzling light either by day or night. Too much sunshine in the school-room or at home is injurious to the eyesight. Light green or yellow shades are commonly used to modify too strong light. At night the illumination should be soft, even if the whole room is flooded with light. Indirect lighting is being found most serviceable in this connection. The remarkable results of indirect lighting at the Panama Exposition indicate the possibilities with this kind of illumination.

Subdued lighting in the schoolroom is made possible by walls tinted in light green or light buff with ceilings in cream color. The once and not altogether abandoned practice of painting schoolroom interiors in chocolate or olive hues cannot be too strongly condemned. Such colors may not show finger marks and spots, but neither do they stimulate the pupils to have pride in their room and consequently to keep it neat and clean.

The foregoing provisions, however, must not divert attention from the most important requirement, namely, *sufficient* light. One of the finest high school buildings in this country lacks this important feature. Its observance of the hygiene of lighting is correct in other respects; but the rows of seats farthest removed from the windows are insufficiently illumined, even on the brightest days.

The principles of school hygiene regulating the *amount of light* may briefly be stated as follows:

The *window area* of the schoolroom should be at least one sixth of the floor area; on the lower floors one fourth of the floor area. There should be no windows in front. If used at all on the back wall of the room, they should be about eight feet from the floor and serve principally as means of ventilation. As already stated, the main source of light should come from the left. On the right wall, when necessary, there may be supplementary windows with less lighting capacity than that of the windows on the left. Top or sky lights should be avoided. They throw shadows, are likely to be obscured by snow in winter; and in summer they cause the sun rays to beat down on the pupils. Furthermore, they are hard to keep clean. Windows should reach as close to the ceiling as possible, at least to within six inches. The top of the glass surface should be twelve feet above the floor, thus allowing eight feet for the length of each window. The bottom of the window should be at least four feet from the floor in high school buildings, the sill being on a level with the eyes of the pupils seated at their desks.

The windows should be placed as far to the rear of the room as possible. The mullions between windows should be as narrow as safety of construction permits. Metal mullions about ten inches wide guard safety in the small building, but wider dimensions will be necessary in larger buildings. The windows, if constructed in banks or groups, should be separated by piers ranging from a foot

to three or four feet according to the size of the structure. By making the outer portion of the mullions and piers wedge-shaped — reaching almost a sharp edge — sufficient light will be admitted whatever the width of mullion and pier. School boards will find that the expense of such mullions is almost the same as for brick piers.¹ Steel crossbeams may be used. Some architects use the arch lintel, but others believe such practice is inadvisable. The general outlines of windows should be plain rectangles. Large window glass is substituted by small ribbed glass in some schools. The latter style tends to break brilliant sunshine and give the needful softness of illumination.

It has been found that nine 36-candle power, 40-watt Tungsten lamps, each equipped with the diffusing prismatic glass coated on outer or inner surface with a white enamel is the best light. By arranging these Tungstens in three rows, parallel to the desks and placing each lamp ten feet six inches above the floor so that the center of light distribution falls slightly to the left of the middle of the room when facing the teacher's desk one obtains 2.5 candle feet at every desk.² Acetylene and also gasoline lighting have been found very satisfactory for country and village schools. They give a bright, white light, and are cheap.

Blackboards shut out a great amount of light. For this reason it will be found beneficial to cover the blackboards when not in use with roller or drawn white curtains.

The school building should not be handicapped by the close proximity of tall trees or high buildings. These tend to shut out a considerable amount of light.

As a general requirement it may be said by way of summary that there should be light sufficient for the pupil to read 20 Type at 20 feet in any part of the room and diamond (brilliant) at 12 inches minimum distance, the book lying on the desk as it should

¹ Warren R. Briggs, *Modern American School Buildings*.

² B. B. Hatch, electrical engineer for the School House Commission of Boston.

be used by the pupil. Cloudy, muggy days, and late afternoon hours require, of course, more light; and this should be provided for as suggested in the foregoing paragraphs.

b. Heat. Probably in most schools and with most individuals there is more likelihood of the room being too warm than comfortable or too cold. Rooms that are too warm produce drowsiness and sluggishness. In country schools, however, where heating is provided usually by means of stoves, the distribution of heat throughout the room is unequal, pupils near the stove getting too much and those farthest away too little heat. For good studying 65°–68° Fahrenheit is ample. In England and Scotland the regulation calls for 65°. The exact amount of heat depends on the structure of the walls and floors, the pupil's clothing, age of pupils, kind of food eaten, and somewhat on geographical location. Young people in extreme northern climates are more accustomed to cold, are hardened, so to speak, to the climate, and probably would find comfort in a room that to others might seem unbearable. Persons with sluggish blood circulation require for comfort's sake more heat than the very robust.

(1) *Kinds of Heating.* Considerable advance has been made in the improvement upon the old fireplace, and the "base-burner." Both of these means of heating, however, are still useful, and might well serve to supplement heat from other sources, whenever needed. The stove is still used in most country schools, but as a sole means of heating is injurious for reasons already named. But surrounded by a "jacket" its distribution of heat will be more uniform. The *hot-air furnace* resembles the jacketed stove, but is placed in the basement. It provides for proper ventilation in cold weather; is more easily managed than steam or hot-water heat; is better adapted to milder climate; provides needful moisture at reason-

able expense; and all together is cheaper than any other kind of central heating. But it has certain disadvantages, as, for example, the danger of gases from the combustion box getting into the ducts that lead to the rooms; fluctuates in amount of heat and unless carefully watched fails to supply sufficient heat especially to rooms on the cold side of the building. *Steam heat* is becoming more popular. Its supply of heat is comparatively steady. The amount of heat can be regulated for even distribution throughout the building. Its chief advantage lies, however, in the possibility of keeping the boiler-room in a disconnected annex reached by a steel and asbestos door, and thereby reducing danger from fire to a minimum. Experts, however, are required to manage it. Pounding in the pipes is not an infrequent disturbance; breakage is frequent and costly. *Hot-water heating*, while resembling steam heat, is better suited to a mild climate, and costs less to maintain, although the cost of installing is greater than that of the other systems. For school purposes, however, it is hardly to be recommended. Too much time is required to heat the whole building. There is danger of the water freezing in the pipes unless the janitor maintains a low fire when the building is not used.

c. Ventilation. Closely related to the matter of heating is proper ventilation. In many homes and schools the air is heavy and unfit for study purposes. Attention should be called to a recent investigation which seems to prove that air is impure not because unchanged but because it lacks circulation. If currents of air could be kept moving, this investigation shows that the same air might be used over and over again with no serious results. If, for example, large electric fans maintained a constant circulation of air, it would matter very little whether or not the windows were open or change of air came from other sources for a considerable time. The air currents in the room would by themselves keep the occupants

of the room comfortable and energetic. However this may be, poor ventilation causes headache, lassitude, faintness, sleepiness, dizziness, and general nervousness.

Good ventilation involves air currents, temperature, and humidity. The last named must not be overlooked. Too little moisture in the air of the schoolroom causes dry nasal passages and membranes, conditions that render the pupil liable to infection outdoors. The amount of humidity depends upon the locality and the temperature. Large ventilating systems provide needful humidity by forcing the incoming air through sheets of water, thereby also washing and cooling it. Where stoves are used, a receptacle of water on the stove will provide moisture.

(1) *Methods of Ventilation.* The usual method has many advantages. Windows open at top and at the bottom allow the impure air to escape and the fresh supply to enter. It is better, however, to open the windows wide at stated intervals and then close them rather than to keep them open constantly. This method of course is cheap. There is no skill needed in keeping it adjusted. The Plenum System accomplishes the same results by a much more intricate process. Air is supplied through the basement, forced into air ducts by huge fans, these ducts opening into all the rooms. On the inner wall a second opening allows the "impure air" to escape. With this system it is unnecessary to open the windows at all. Unless, however, all parts of the system are in order, the results are unsatisfactory. It probably is the best system of internal ventilation, although still lacking perfection.

The Gravity System is most serviceable in small schools where more elaborate systems are prohibited on account of the expense. The common jacketed stove, already referred to, and the hot-air furnace are the prevailing forms of this type of ventilation.

d. Appearance of Pupil's Study Hall at Home and at School.

Pupils in high school and students at college are peculiarly fond of denlike rooms elaborately furnished with trophies, pictures, pennants, pillows, books, furniture, etc. Aside from the lack of artistic simplicity in such oriental and imitative luxurious surroundings there is a distinct loss of the *suggestion of study*. The appearance of the room suggests a thousand and one distracting reminiscences rather opposed to concentration and prolonged willingness to work. Without in any sense being ugly the pupil's study room should be plainly furnished. Lounge, rocking chairs, pillows, are so many temptations to relaxation.

System, however, should characterize the arrangement of books, papers, pencils, references. Much time is lost in not being able to find things. If the pupil is compelled to gather up his references when not yet through with them, there is loss of time in sorting them again and finding the place where to begin. For this reason the pupil's room should be so private that he can leave things as they are and continue the next time with the least amount of confusion in starting. This habit of knowing where to find things is important not only in studying but in every phase of economical living. If the pupil owns a desk, he should determine upon a convenient scheme of placing his study paraphernalia in the various drawers. Certain books should occupy defined places on the shelves — not by color or size but as nearly as possible by subjects.

The orderly arrangement of the room (not necessarily "spick and span ") suggests work rather than idleness and day dreaming. The business air of the pupils' workshop indicates that study is, for the time being at least, an earnest vocation, not a lightsome occupation or a dull drudgery.

In the school there is little likelihood that the study hall will appear overfurnished, but there is danger of distraction from much writing on the blackboard, or elaborate stage settings, as the writer saw in one high school where the stage held a confused collection of athletic trophies, biological and botanical specimens, manual training exhibits, and domestic science mysteries.

3. **Psychological Conditions.** The reference to a simple, orderly arrangement of the study room leads to a more detailed discussion of attention and posture, mental tone, and emotional states which may aid or hinder studying.

a. *Attention.* The question is often asked — How can I learn to concentrate? Many attempts have been made to answer, but in all too many cases the replies amount to little more than an imperative — pay attention. But that is the rub — what is the price required? Some individuals possess a peculiar power of concentration; others, try as they may, fail to hold themselves to the task for any long period. The following suggestions have proved helpful:

(1) *Posture.* Avoid a reclining or swinging posture. The attitude of attention is alert — the sentinel must not sit down or doze on duty; he should keep moving. The chauffeur and locomotive engineer look straight ahead — in a position tense, alert, ready for action. The pupil in a straight-back chair in front of his table or clock with light well directed is seated at attention.

(2) *A Quick Start.* William James has written about the agony of starting — an experience known probably to all writers. In school children fidget, drop books and pencils, rearrange papers, etc., several minutes before getting down to work. If they do so at school, they surely do the same thing

at home. There might well be some drill in the quick start — the speedy elimination or avoidance of preliminaries.

(3) *Time Limit.* One of the best aids to concentration is being compelled to work under a certain amount of pressure, — so many problems in fifteen minutes, — so many pages in ten minutes. Under the divided period scheme of supervised study with little or no home study, the pupil knows that most of his studying will be limited to the class period. If the assignment is reasonable, he will be able to concentrate during school hours (with the additional vacant period for study) on practically all of his lessons.

(4) *Interest in the Subject.* This goes without saying. Few boys grow tired of playing baseball or hunting. They concentrate on what they like. It is the teacher's task (how often this has been said!), therefore, to arouse interest by enthusiasm, good cheer, kindness, coöperation, supervision of studying. Enthusiasm is just as contagious as indifference.

(5) *Rapid Reading.* Mind wandering while reading a book is a frequent hindrance to studying. It is necessary to take oneself well in hand, and increase the rate of reading for several lines, then to go back over the same lines until the attention is normal. The increase of rate demands more attention — one is conscious of being at work, and this very fact of added strain or effort checks the dilatory day dreaming or loose associations.

(6) *Variety of Appeal.* Under the most ideal conditions monotony is inevitable unless the pupil attack his lesson from more than one angle. After studying history, for example, in one textbook it would be an advantage to read some novel dealing with the period or some other author whose point of

view is fresher and whose literary style is attractive. Monotony is caused by discouragement, overconfidence leading to laxity of effort to advance beyond one's present attainment, and also by the daily routine of method in teaching and studying. The kind of stimulus must change or the amount of it must increase, but the best incentive is that produced by success itself. The pupil should aim, then, to develop more skill, more knowledge in his subject in order to sustain and increase attention upon its various phases. The variety of appeal will increase knowledge and enlarge one's conception of the subject and by this very fact strengthen attention.

b. Feeling Tone. Another important consideration in effective studying is the pupil's emotional condition. How we feel has more to do with success than is generally recognized even by pupils themselves. Pleasant and unpleasant feeling tone, it was seen in the first part of this chapter, depends upon health conditions; but other factors enter into these states of feeling, factors common enough in every one's life but hardly respected as yet in formal school work. Several points must be noted.

(1) *Success produces a pleasant feeling.* The knowledge that one can do a task at first very difficult is a powerful push to advance to higher forms of achievement. Repeated failures result in discouragement, weakness of will, and eventually in loss of ability to attempt big things. The pupil needs the approval of teachers; but, more than this, he must have his own approval growing out of well-applied effort at last victorious. Praise that is undeserved works harm, not only morally, but psychologically. It tempts the pupil to get rewards without having earned them. The daily awareness of forging ahead is a continual stimulus to advance.

(2) *Confidence in one's knowledge of fundamentals leads to forceful satisfaction.* Success in studying involves not only the forward movement but also the deep-going knowledge of the subject. The daily or detailed advance, important as it is, must mean that the pupil is getting a grip on the larger whole of the subject. Battles fought and won become significant only when they are known to contribute to the ultimate triumph of a huge campaign. The pupil should be aroused to ask himself in reviews, in conferences, in reports, etc., what he understands of the more fundamental meanings of history, mathematics, science. Do these subjects begin to appear with far-reaching relations or are they still merely unattached, daily assignments and facts? The sense of familiarity with the whole subject contributes to the pleasant feeling tone. It is the joy of the engineer, of the artist, of the public speaker that he can move among details with the easy advance of one who knows what these facts mean to one another and to society. He feels at home and therefore is secure and satisfied. This is peace leading to power — harmony calm with strength.

(3) *Moods are the emotional climate that exhilarate or depress the pupil at work.* Another condition of studying is developed by those subtle states termed moods. It is not always possible to determine their origin. Superstition, ancient and modern, has a motley variety of explanations, but none of them deserves serious notice. Modern abnormal psychology suggests several reasons, some of which doubtless account for a few of these moods. The pensiveness of a gray day in autumn, with the air misty from burning leaves and suggestive of loneliness, loss, defeat, produces a state of feelings quite different from the cheerful activity of a bright day in

June or an April morning along the coast of Maine. We smile at the moods of young people, their loves and their dreams, and our smiling evinces a careless neglect of one of the most potent forces in adolescent life. Whatever causes these moods, the fact of their existence must be recognized, especially during high school years.

At the time when the sex instinct assumes its more pronounced aspects and the individual enters upon perhaps the most crisis period of his development, there are bound to be tendencies, preferences, motives, and activities that seriously affect his intellectual growth. The additional fact that in the very nature of things this crisis must be concealed, and that society fails to regard the fancies of youth very seriously, increases the handicap that now threatens to swerve the pupil from sustained effort in school. At present there is apparently nothing that can be done to lighten the sweet burden of early love or mere attraction between the sexes. The young people don't want it supervised, and too much attention to it on the part of parents and teachers may frustrate the very purpose of control. It is an experience that most people pass through and strangely forget. Call it silly, temporary, and let it go at that!

But high school pupils must study, and it is the function of organized education to make this possible under the most advantageous conditions. Sweet melancholy, indifference, loneliness, "wanderlust," or cheerfulness, excitement, impulsiveness, confidence, etc., are moods that swing the pupil back and forth at the time when he meets new subjects, new methods, new social conditions in the high school. Obviously, the supervisor of study must deal with this problem. Tact, insight, sympathy, and fairness must somehow blend with the

necessary observance of routine, effort, and application day by day. The private longings and feelings of the pupils must be understood and their symptoms recognized.

(4) *The clash between self-preservative and social instincts tends to hinder progress in studying.* Two important facts must be noted as common among high school pupils. One of these concerns the personal appearance of the pupil; the other, his popularity.

(a) *The Pupil's Appearance.* Ridicule is one of society's cruelest weapons of preventing strangers from breaking into a desired group. In high school the pupil whose garments are plain or limited in variety is likely to be avoided by the better dressed. This is true especially among the girls. Cliques are unavoidable; it matters not how one may legislate against secret organizations in the high school. All of us choose companions who have a sufficient number of qualities in common with our own and a few desirable ones lacking in ourselves. Personal appearance plays an important rôle in such selection of friendships. It works harm to the poor pupil whose parents cannot afford to provide her with many or pretty clothes. She feels shut out, and may grieve in secret over the slights and ridicule thoughtlessly expressed by her schoolmates. To some it may serve as a powerful incentive to show her frivolous classmates that clothes are not everything; to others it becomes a heavy, gloomy burden that shuts out the joy of school days. Such pupils tend to leave school.

Teachers should know also how peculiarly sensitive the tall boy is in a class of pupils smaller in size although of the same age as his own. We want to conform to the group we like or make it conform to ourselves, but obviously the oversized boy can do neither. While less prevalent in the high school

than in the lower grades, an oversized first-year pupil in long trousers feels embarrassed among pupils in knickerbockers. He too wants to break away from such conditions, and is likely to leave school for blind-alley occupations. Studying has been checked by the feeling tone of embarrassment due to the pupil being unfavorably conspicuous in a group where a prevailing school organization compels him to belong.

Physical deformity and facial ugliness have been found productive of similar results. Many of these "different" pupils are intellectually capable. They are in every sense of the word normal as individuals, but in the constant clash of group life they are crushed, submerged, ostracized for no fault of their own. Again, the teacher's problem is acute. To segregate them would be unfair and destructive. They deserve notice, kindness, and friendship. Appeal to that finer sense of justice and heroism deep in all young people would be one remedy; appeal to personal courage through the study of great biographies and the literature of success where men and women of humble origin are seen to rise to pinnacles of power and fame would be another; a spirited, often repeated, and amplified interpretation of democracy, with its gospel of opportunity, would be a third.

(b) *Popularity*. This is often arbitrary and cheap. The pupil who makes it an end may suffer shameful defeat. It does not always depend on favorable appearance, but more often on the finer qualities of grit, cheerfulness, coöperativeness, achievement. The brilliant debater, long punter, fast runner, skillful basket-ball player, are usually candidates for the Popular Club. But many a quiet, resourceful, studious pupil is elected to universal esteem in the school. Others who fail to win popular favor, and who really deserve it, suffer secret

humiliation. They brood or resort to unworthy means to become popular in less desirable groups. Whatever the cause or circumstances, unpopularity in many cases is a serious hindrance to study. It tends to throw the pupil too much upon himself in a morbid, self-pitying, or self-depreciating way, and therefore weakens the resolution to forge ahead or to grapple more earnestly with difficulties.

The remedy, in part, is that mentioned under the preceding head. Furthermore, in public addresses, in an impartial attitude toward the pupils, in rewarding effort as well as achievement, in cordial initiative toward those pupils whose timidity prevents their own approach to the teacher for a confidential chat — encouragement, excitement toward better effort may be effected. In general, however, attention should be directed to these common conditions of individual life and some place assigned them in one's judgment of the pupil's attitude toward school work.

(5) *Weather and climate affect the pupil's feeling tone.* This statement hardly needs elaboration. None of us feels active on a muggy or rainy day. Intense summer heat weakens resiliency; the climate of the rigorous north or its milder forms in less extreme latitudes has a sting and "punch" that makes our whole being tingle with the joy of work. Extreme summer climate, however, is less conducive to sustained effort. It is well known how intimately geography, topography, and history are related. The operas of Italy are essentially different in atmosphere, mode of treatment, character of music from those of Wagner and Strauss. The effect of the southland on Byron's poetry is easily understood. The difference between Boccaccio and Wordsworth is largely due to climate. One may notice the same fact as accounting for

the musical lilt of the Italian and Spanish languages and the rugged crash of the German, the Swedish, the Russian. Who could speak like a German in the balmy peace of the Mediterranean, or like a lute-fingering Italian in the mountains of Scandinavia or Scotland !

Once more the teacher's task adds a responsibility. The day's success depends somewhat on sunshine and on rain. Climate and weather require adjustments in classroom procedure, just as the psychologically trained organist adjusts the key of the hymn tune to the weather conditions, thereby assenting to a profound truth that religion and climate have more in common than theologians are willing to admit.

c. Distractions. In addition to the foregoing conditions and hindrances, some of which are annoying distractions, the pupil is hampered by noise, confusion, worry, conflicting aims, and other forms of unfavorable environment. Study in a room where recitations are being held, or near a factory, railroad, and roughly paved street, is more difficult than in a neighborhood where quiet is usual. It should be noted, however, that investigations have shown how the nature of the distraction affects the intensity of disturbance. Distractions similar to the work the pupil is engaged in are more serious than those wholly different in character. For example, if the pupil is studying English literature while some one near by is reading a novel aloud or reciting on some other phase of the subject, he is likely to be more disturbed than if some one is demonstrating a proposition in geometry or dressing a board. The noise would at first distract his attention, but the interests of work and distraction being quite dissimilar, the pupil with some effort can eventually concentrate on his work and wholly disregard the noise. But the novel or recitation are similar

to the work he is doing. Attention is tempted to run back and forth. Concentration is focused on English, but with ill success on any special form of it at the time.

Alternate seat and recitation work would be more advantageous if, for example, one section studied spelling while another recited mathematics, the section studying having just previously recited on mathematics.

(1) *Distribution of Distractions.* N. C. Johnson¹ found the following distributions of distractions:

TABLE XII.—TENDING TO INTERFERE WITH STUDY

	1	2	3	4	TOTAL
Reading stories	16	—	10	11	37
Parties	7	2	4	8	21
Violent exercise	—	4	6	3	13
Baseball	7	—	1	—	8
Theater	7	—	1	—	8
Running	4	1	—	—	5
Bicycling	4	1	—	—	5
Dancing	—	—	1	3	4

(2) *Fatigue* is commonly referred to as one of the most serious hindrances to study. Its most easily noticed symptoms are a depreciation in the quality of work, a decrease in the amount accomplished, and a growing failure to attend to what is going on. The result is a loss of interest in studying and a tendency to loaf or to sleep throughout the day. Eventually, fatigue may lead to complete nervous exhaustion manifested in acute sensitiveness, irritability, love of contentions, and abnormal forms of excitement, and finally hysteria.

One must not be too hasty to judge symptoms of indifference,

¹ *School Review*, Vol. VII, May, 1899.

as those of fatigue. Many other factors reduce responsiveness. The subject may have become more difficult, ill health may have begun its inroads, the teacher's methods may lack spring and "punch." There is more danger of girls becoming seriously fatigued than that boys will be exhausted. Girls are more likely to remain indoors, while boys find abundance of exercise. Great care should be taken to suit assignments to the health conditions of adolescence and to the factors of physiological and psychological development taking place at this time.

GENERAL SUMMARY

The considerations deemed significant in this chapter have far-reaching applications. Health, housing, and mental conditions are of the first importance in the life of every individual. Teachers need to know these facts for their own sake and for the good of their pupils. The supervision of study, then, is more than overseeing the pupil at work on an assignment — it includes the supervision of his environment, the conditions that make or mar study efficiency. The teacher, as far as possible, should know the fundamentals of school hygiene, and throughout the school there should be a concerted effort to apply the principles of physiology and psychology to the pupil as a learner. This broader aspect of duty will eventually make the school more vitally a part of the home life of each child. Such a democratic service must be viewed as ideal.

CHAPTER V

THE ORGANIZATION OF SUPERVISED STUDY

I. INEVITABLE VARIETY IN SCHEMES OF ORGANIZATION

THE medical student spends four long and hard years studying the scientific theory of preventing and curing disease. Upon graduation he immediately begins, as an interne, to apply the knowledge gleaned from his several courses. Later he opens an office of his own, — “begins to practice.” Inevitably and invariably he finds that the cases of his patients present symptoms and combinations quite different from similar cases described in textbooks and studied at the medical school. He finds it necessary to adapt his knowledge to the case in hand. Each case must be treated according to its own causes and symptoms. Similar conditions obtain in theological seminaries. Men are there taught, among other things, to preach by set homiletic rules. But the young minister soon finds that preaching by set rules is likely to lead to failure on the frontier. If he is wide awake, stirred to white heat by some overwhelming civic or moral conditions, then conviction, zeal, courage, tender solicitude, will force him to modify rules and sermon outlines. He will preach with fire, abandon, magnetism, and the *sine qua non* of success everywhere — sincerity. It is so in all professions. The preparatory courses must deal with certain fundamental prin-

ciples. But life is full of varieties; they appear, one cannot tell when or where or how.' The successful man is he who can take principles and by sane judgment apply them to the variations from type cases, type sermons, type bridges, etc.

The foregoing analogies apply equally well to the profession of teaching. Normal schools and departments of education present certain principles of education and illustrate various methods of teaching. The young teacher in her first school may believe that now at last her careful preparation can be applied in all details to the class or subject over which she is responsible. Alas and alack! Again life's variations upset the wisest rules and advice. If she adheres rigidly to all the details of her preparation, she may succeed, but more than likely the effort to dovetail professional preparation into local and individual peculiarities will result in failure, despair, and tears. Teachers with experience are, therefore, usually more valuable to a school than a highly trained newcomer. It is essential to use common sense, judgment, native shrewdness in dealing with school conditions. There is no "general method" of teaching every subject, everywhere, to all kinds of pupils. Originality, initiative, independent thinking, must dominate the teacher's methods.

For this reason it is not surprising to find that in attempting to administer supervised study, superintendents and teachers have devised a considerable number and variety of methods of organization. Some of these methods *prima facie* seem wholly inadequate. Others probably are effective in the localities where they are used, but if employed elsewhere perhaps would be less effective. Investigations are going on that aim to ascertain the relative effectiveness of some of these methods. At present writing, however, very few data

are obtainable, and these refer only to one type of supervised study in relation to none at all. The methods to be discussed in these chapters are now being used all over this country. Their variety indicates serious interest in arriving at some organization that will advance the pupil's opportunities to reach his maximum ability.

The methods now employed may conveniently be grouped under the following main heads: *General Organization*, embracing the usual assembly hall, conferences, study period, study program, and eclectic plans; *the Subject Organization*, embracing the various forms of divided period, study period for each subject, alternate periods, and occasional supervision plans.

II. GENERAL PLANS OF SUPERVISED STUDY

They are called "general" because no attempt is made under these plans to assign each teacher the task of teaching pupils to study the subject in her charge. The teacher's work is confined to teaching the subject; others are assigned the task of supervising the pupils at work on this or any other course. Some of the plans under this head obviously do not deserve the name supervised study, while others depend so much on the unique ability of the person in charge and on considerable expenditure of money that they are quite beyond the reach of the average school. These plans will now be discussed in detail.

1. **The General Assembly Hall Study Period.** In practically every school one large room is called the study hall. Here pupils gather during vacant periods to study whatever course they choose. As a rule many are in the room. In some schools this room is the assembly hall; in others, one

of the larger classrooms. In one high school the author found the study hall occupied by nearly one hundred pupils from all classes of the school. The study period is in charge of one person, who may be the principal, vice principal, a teacher, or a student monitor. In some schools the librarian is assigned this task of police duty. When the number of pupils is exceptionally large, a certain school employs three teachers, who stand guard over the behavior and attention (?) of the pupils. Principals vary the method of supervision according to local conditions. In some schools teachers are assigned to groups of fifty pupils. In others there is a special teacher known as the assembly hall teacher, or there is one person, as the assistant principal, who remains in the room throughout the school day. The practice in one school has been to require only freshmen to use the study hall. For reasons not wholly clear to the writer it is customary in other schools to limit the use of the study hall to pupils in mechanical drawing and bookkeeping, or English all year, or history only. In some schools the hall is controlled entirely by student government.

Criticism of Study Hall. However appropriate it may be to call these rooms study halls, they are not, and under the most favorable conditions could not be, classed as supervised study halls. In the first place, the number of pupils is too large for one teacher without a more specific differentiation of groups according to abilities or mental types. Again, one teacher ought not to be expected to know the thousand and one things of all subjects. Furthermore, the teacher in charge is incorrectly assumed to be present to help the pupil do his own work. Supervised study does not mean doing the pupil's work for him. In the fourth place, there is insuffi-

cient time to be of service to more than a very few. Again, the teacher as a rule waits for the pupil to call for help — there is little or no attempt by the supervisor to examine the methods of every pupil. The teacher simply waits for difficulties to appear. Again, however careful every one may be there are inevitable distractions in these halls. Unfavorable study conditions obtain.

The fact is that to call these rooms study halls is a grave misnomer. Under the best conditions they cannot fulfill the requirements of sound study supervision. Some conscientious pupils doubtless find them helpful, especially before and after school when the length of the school day permits their being open. They may be better than conditions at home in many cases. But they do not provide what pupils actually need, — namely, definite and frequent instruction in correct methods of study.

2. **The Conference Plans.** These are of two kinds — *the Stated Conference* and *Appointments*. The former is not infrequent. Some principals require teachers to remain each day for a half hour after the regular recitation schedule is over. Pupils may then consult their own teachers. Doubtless the plan is far superior to the study hall when used as a supplement to the latter, for opportunities are given the pupils to ask for advice, to discuss difficulties, and teachers thereby learn many of the personal peculiarities of their pupils. Under whatever system study is supervised, the conference period should be maintained. Informal, personal, friendly, it offers possibilities of influence that probably no other method can provide. The conference hour at Teachers' Institutes is frequently more helpful than the formal lectures. The psychology of group and formal instruction is

necessarily different from the individual conversational method. Both are important, but for the best results each is necessary to the other.

An elaborate form of the Stated Conference is maintained for first-year pupils in the high schools of Pittsburgh, Pa.¹ One period out of four, each week, is devoted to special supervision of study. At that period no assignment of lessons is made, and no preparation required of the pupils. It is variously called the "conducted study period," the "conference period," and the "unassigned lesson period." It fulfills a threefold purpose:

1. To relieve first-year pupils from the strain of a too heavy schedule and to improve the quality of work undertaken.
2. To give the teacher an opportunity to train pupils to think, to attack new topics properly, and to secure careful and accurate reviews.
3. To afford opportunity for special and individual help to pupils weak or temporarily disabled on account of illness or who for other reasons are behind in their work.

The work became operative in September, 1910, and is used in English, algebra, Latin or German, and elementary science. The plan bears very close resemblance to the DeKalb type discussed in the next chapter.

Conference by Appointment. This differs from the stated conference in several respects. Usually the appointment is made by the teacher. Weak pupils are asked to confer with the teacher or the principal for various reasons. The request itself may savor of some penalty. There is a presumption at the outset that the pupil has failed to meet

¹ Ryneerson, "The Conference Hour in the Pittsburgh High School," *School Review*, Vol. XX, 1912, pp. 246-253.

requirements. Bad news travels fast and it does not infrequently happen that the pupils whisper the news abroad that so and so "had to see the principal or teacher to-day." Trivial as this may seem, it nevertheless deserves consideration in dealing with high school people. Appointments should be made inconspicuously. Although they may be necessary for disciplinary reasons, this fact should be minimized at first. Discipline to be effective must rest on facts carefully and justly obtained. The conference by appointment is also employed as a means of arousing weak and backward pupils. In many schools it is confined to such cases. There are occasions, however, when appointments should be made with advanced and faithful pupils for their further encouragement and progress.

(1) *The Technic of the Conference Hour.* Whatever the type employed, it is essential that the principal or teacher conduct the conference with some system. For this reason it should be insisted on that pupils come punctually. The teacher should be just as prompt. Much time may be wasted in conference and serious injustice be done by requiring pupils to wait unnecessarily long. The conference should be well planned. Its program should be definitely in the teacher's mind, although it need not be followed in every detail. But in the informal discussion there is a tendency to overstress certain incidental points and to neglect the most important. For this reason the teacher should control the conversation, bringing it to a close as quickly as possible, and reach some definite decision. The conference should be definite, in other words. Even if the decision cannot be final, the pupil should carry away some definite plan or information.

Moreover, the general tone of the conference should be as

informal as possible. Authority, dignity, officiousness, have their value in dealing with certain kinds of people, but in high school it is well to establish friendly relations with the pupils, to make the conference period so personal that here the pupils will unfold secret difficulties or problems that are fundamental in their studying. Opportunity should be given pupils to state their problems clearly, and by tactful questions the teacher should encourage them to discuss phases of studying that instinctive timidity otherwise would prevent them from mentioning. If the teacher shows a tactful, sympathetic interest in the pupil's life during the conference much may be accomplished by this means. Detailed technic is illustrated in Part II under the various subjects.

The conference periods, when an integral part of the general organization of supervised study, should be carefully recorded. They can be made a basis of marking. By reference to them the teacher may be better able to judge of the amount and quality of the pupil's progress. Appointments should be kept in a conference book or form part of a General Record. A suggestive page in such a conference book is given below. If the conference is stated, the pupil's name, date, and reason for conference can be recorded after the hour. If by appointment, the engagement is made by record on the top of the page. The conference itself with the teacher's decision occupies most of the space. By confining the reference to one page of the size here suggested, little time will be required for making the record.

If so preferred, a loose-leaf book can be employed with similar type of record. All the conferences with the same pupil can then be kept together. Or cards serve the same purpose. If cards are used, it probably would be more con-

SPECIMEN PAGE OF CONFERENCE BOOK

NAME OF PUPIL _____

DATE OF CONFERENCE _____

REASON OF CONFERENCE _____

THE CONFERENCE

PUPIL'S SIDE _____

PRINCIPAL'S OR TEACHER'S DECISION _____

FIGURE III

venient for filing purposes to use the long dimensions of the card as top and bottom. The method of recording would be the same.

(2) *Benefits of Conferences.* Rynearson¹ states that teachers employing the conference found it advantageous for the following reasons:

1. It affords a practical and efficient means of helping the first-year pupil to keep up to grade.

2. It combines happily the class and individual methods of teaching.

3. It serves the useful purpose of a general "clearing house" period for review, drill, discussion of obscure principles, and for personal work with the individual pupil.

4. It encourages the pupil to express his doubts and difficulties, without fear of low grades.

5. Through intimate personal contact it stimulates a feeling of mental sympathy and helpfulness between teacher and pupil, and obviates the doubtful practice of keeping children in school to make up work.

3. **The Study Coach.** Under this system of supervised study one person devotes all of his time to the work of coaching pupils individually in their studying. The person is employed for this purpose alone, as at Jackson, Mich. All the pupils of the high school are referred to the study coach during the school day. Regular office hours are conducted, the pupils calling when they need assistance or being required to consult the coach because of unsatisfactory work. Study coaching is of two kinds — the unassigned teacher and the general study coach.

- a. The Unassigned Teacher.* This plan was highly

¹ Op. cit.

developed by Superintendent Spaulding at Newton, Mass. It has recently been introduced at Hastings, Neb. The unassigned teacher has no regular class, either in the elementary or the high school grades. The regular work of the classroom is supplemented by that of the unassigned teacher who usually is kept busy throughout the day coaching or tutoring the various groups needing special instruction. It requires, of course, a rather unique type of teacher, one who has not formed almost ineradicable habits of class teaching. Study coaching is individual teaching exclusively and demands a type of personality and method essentially different from the usual procedure of the classroom. At Newton, Mass., the best students of the Normal School are employed for this work.

(1) *Technic of the Unassigned Teacher.* The operation of the plan¹ is described as follows:

"The day's work of an unassigned teacher may be something like this. For the first half-hour in the morning there comes to her room a little group of half a dozen children from a third grade. The third grade teacher has selected these children because they are all having difficulty, beyond that experienced by their classmates, with some process in arithmetic. . . . The unassigned teacher has previously been informed as fully as possible concerning the condition and needs of these children. The half-hour is spent in discovering still more accurately the peculiar difficulties of each one, and in giving each just the assistance and practice which he requires. This work is individual so far as need be; at the same time the group can usually work together advantageously.

"At the end of the half-hour these children return to their class and a group of children come from the seventh grade; perhaps there are only four in this group. They are not having unusual

¹ W. H. Holmes, *op. cit.*, pp. 69, 70.

difficulty with any subject. . . . They need more work and more difficult work than their class as a whole is capable of. Yet they are not fitted to pass at once successfully into the class next above theirs. The unassigned teacher prepares them for this long advance step. She takes them through the essentials which separate the work of their present class from that of the class which they are preparing to enter. To-day and perhaps for several days, the work is in arithmetic. Other days it will be history or geography or grammar.

"When the period is over, these children give their place to a group from a fourth grade. They are temporarily behind the work of this class . . . they have been kept out for several weeks on account of illness. The unassigned teacher's work with these will be similar in purpose to that of the last group; she will take them rapidly over the essentials covered by the class during their enforced absence.

"The unassigned teacher's fourth period is occupied with a full division, perhaps twenty pupils, of children of the fifth grade. They come from a large class composed of two grades, the fourth and fifth. To relieve the regular teacher of some of her many recitations, the unassigned teacher takes the work in arithmetic with the fifth grade division.

"The fifth period is devoted to a single child. He does not belong to any grade, judged by the evidence of ability which he shows when assigned any definite task. So he probably comes from a class in which he is not too conspicuous on account of his size. The unassigned teacher tries patiently to determine just what the serious obstacles in the child's advancement are. He may have to be sent to a special class for backward children. Possibly with sufficient individual attention he can work with some regular class."

The foregoing description of the unassigned teacher's work in the elementary school suggests what could be done and what needs to be done in the high school. Similar conditions

obtain here. In small high schools the regular teacher, even with conferences, does not have time for the work already described. In some districts where the high school teacher also teaches grammar grades, obviously the day's schedule is already crowded. Unassigned teachers, although necessitating an additional salary, could save communities money and time. Normal School graduates or graduates from Schools of Education might be required to do this type of work as a "practice year" before receiving full license to teach.

In connection with this work it is important to keep accurate records of the process. Many schools fail to provide for permanent records of the pupil's school career. This is unfair to the pupil, to the parent, and also to the new teacher, who without such records must either begin haphazardly the same kind of work or make wasteful omissions and repetitions — both of them increasing the cost of school instruction. The following record sheets are suggested not with any desire to increase "red tape" or to burden the teachers with secretarial work, but every teacher should have accurate knowledge of as many factors in the pupil's progress as are legitimately possible. By referring to records like the following the career of the pupil is an "open book" capable of being interpreted and more effectively developed.

This card or blank should be triplicated; *i.e.*, the unassigned teacher is given one by the pupil at the time of the transfer, a duplicate is sent to the principal, and the regular teacher keeps one. By carbon paper these three copies can be made with one writing. When the period of special instruction is over, the lower section of the blank is returned, one copy to the regular teacher by the pupil, and another copy to the

SPECIMEN TRANSFER CARD

TRANSFER CARD TO UNASSIGNED TEACHER

NAME OF PUPIL _____

SCHOOL YEAR — 1st, 2d, 3d, 4th (underscore)

DATE OF TRANSFER _____

SUBJECT OR NUMBER OF COURSE _____

REASONS OF TRANSFER _____

(Perforation)

DISMISSAL CARD TO REGULAR TEACHER

NAME OF PUPIL _____

SCHOOL YEAR — 1st, 2d, 3d, 4th (underscore)

DATE OF DISMISSAL _____

NO. DAYS SPECIAL INSTRUCTION _____

SUGGESTIONS FOR DEALING WITH PUPIL _____

SIGNATURE OF UNASSIGNED TEACHER

FIGURE IV

principal's office, the unassigned teacher retaining the original. In this way the pupil's transfer and special instruction are checked by the three officials immediately concerned. The work of the regular and unassigned teachers is properly recorded by themselves, and the principal's records of each pupil are likewise complete. The card is simple and the information required is essential. Only a small amount of time is needed in making the record. It helps to keep the organization of supervised study intact as a regular, vital part of the school work, and may serve also to impress the pupil with its fundamental importance, its relation to his whole career as a pupil in the high school. It keeps the pupil from drifting through the school at this particular point. His studying is supervised not loosely but systematically.

b. The General Study Coach. This type differs from that of the unassigned teacher in being essentially individual and informal. The pupils take the initiative, consulting the coach as needs arise. They are not transferred to his charge. The coach has a consultation office during school hours, and the pupils may confer with him during their vacant periods. It calls for a person with broad and accurate knowledge of many subjects, although not necessarily as deep going as the knowledge of subject matter by the teachers of the various subjects. The study coach, moreover, should know considerable psychology, especially educational psychology, and its several applications in the learning process. Sympathy, tact, patience are always essential. Insight into the motives and attitudes of the pupils is equally important, for high school pupils are likely to misuse the study coach unless he can forestall such behavior by strong, masterful attacks.

Pupils will try to use the coach as a crutch, trying to persuade him to do the studying for them. If weak, indulgent, craving popularity, he may be tempted to do more for the pupils than is for their intellectual and moral good.

(1) *Technic of Study Coaching.* Several points need emphasis in this connection. The study coach must first of all learn in detail the nature of the difficulties troubling the pupil. The teacher will supply her interpretation of the difficulties. But this is not enough. The pupil must be encouraged to state the difficulties *as they appear to him*. At first he may give only vague replies, make sweeping generalities none of which is specific enough to serve the coach. It becomes necessary, then, for the coach to analyze the situation by careful questions. The following case from the writer's own experience will illustrate this:

A young senior found geometry very difficult. Unfortunately, the teacher possessed a rather repellent personality and seemed wholly out of patience with this girl. This pupil was eager to graduate in the spring, but could not do so without credits in geometry as entrance requirements to the university. She "thought" she understood the theorem and proposition preceding the day's lesson. On being asked to prove it she failed. Step by step, page by page she and the coach retraced the course until the first theorem of the book was reached. She knew nothing about anything in the whole course! The situation was grave enough. Was the girl "born short" in geometry? The following conversation took place:

Q. What do *you* regard as your main difficulty? A. I believe it is because I don't understand the figures. Q. What do you mean by not being able to understand the figures? A. I can't see what the lines mean — they are all lines to me, but the teacher says they mean objects. I can't see the objects. I don't know what

angles are, anyway, in this book. *Q.* Can you draw the outline of a cube? *A.* Yes. (She drew a cube.) *Q.* Now, can you see that cube — does it look like the cube on the desk yonder? *A.* Well, I think it does when I compare them, but I can't always see it so. *Q.* Has this been your main difficulty throughout geometry? *A.* Yes, I had the same trouble before coming here. *Q.* Oh, you studied geometry in another school before coming here? *A.* Yes in —. They used a different kind of textbook with figures that looked very different from those in this book. Besides, the teacher there had patience enough to try to explain a few things. But this one — *Q.* You don't recognize the figures in this geometry? *A.* Well, they look queer, turned around. *A* and *B* were in different places in the other book. *Q.* I suppose you memorized a great deal? *A.* Well, yes, but I could do originals fairly well, etc.

Here was a case of weak visual imaging, resulting in a vague perception of space relations. The girl had no background that could be reinterpreted according to the different textbook. Unable to visualize the figures and having dealt with figures quite different, she had a double handicap. By requiring her to draw every line and to give an adequate explanation of each step with reasons therefor, she was finally coached beyond the passing mark. Other factors operated in her case. She was fond of social life, fond of the boys, athletics, sewing, textile work. She frankly admitted all of these to the coach who gave them due weight.

The pupil's problem must be clearly understood before the coach attempts to supervise the pupil's studying. Often it is a very delicate matter to analyze this problem. One must not be inordinately inquisitive, nor encourage unkind or unjust criticism of the teacher's work. It often happens, however, that the teacher is largely to blame. A certain

amount of knowledge about the teacher's procedure is important in dealing with the pupil's difficulties. But criticism should never be encouraged beyond the point involved and then only in strict confidence. The following suggestions for effective study coaching have been found helpful:

1. Address the pupil kindly with a smile, with a friendly grip of the hand.
2. Ask him to be frank in stating the difficulty. All he says will be regarded *absolutely confidential*.
3. Ascertain as many details as possible bearing on the pupil's general attitude toward the subject.
4. Begin the actual coaching by requiring the pupil to read the problem slowly with proper emphasis on important words. Then set him to work as much of the problem as he can.
5. When the pupil reaches the difficulty, analyze the situation carefully for the *reason* of the difficulty. It has a reason — an important psychological one. Use analogies from common day experience. Attack the difficulty by appealing to senses other than sight. Use manual construction if possible. Use blackboard together with the pupil. Shift the angle of attack until the pupil says, "I see it!" If after many trials he cannot "see it," then tell him what to do.
6. Prevent wasteful energy and time by stopping the pupil as soon as he has begun a wrong procedure. The factor of independence is provided for in requiring a reason for every step taken and at point of difficulty stating reasons for attempting this or that next step.
7. If there is a group of pupils facing the same difficulty, all of them should be given opportunity to state reasons for processes employed in the solution of the problem.
8. Do not work any problem for the pupil. He must do all the work under tactful suggestion by questions. But when absolutely necessary, supply information.

9. Make a record of the difficulties encountered, number of visits made by each pupil, amount of coaching for same kind of difficulty. (See blank on next page.)

The study coach is essentially a diagnostician. His technic depends upon his knowledge of the pupil, the subject matter, and the kinds of difficulties likely to be encountered by certain types of pupils. Eventually, it may be hoped, every teacher will have the training requisite for this type of work. It is individual instruction of the highest kind.

If the work is to have any value for the regular teachers, it is necessary that the coach report the essentials of the cases under his supervision. It is not necessary or just to the pupil to repeat any of the criticism as having been made by him. The criticisms, however, may be worth while and should be mentioned to the teacher impersonally. The record of the findings of the study coach become a vital part of the history of each high school pupil. For this reason they should be carefully filed in the principal's office beyond the reach of any one save the teachers. The blank on opposite page may prove suggestive:

This blank entails very little work. It provides room for a statement of the general difficulty with this pupil and then in detail specific difficulties in the various subjects. By keeping a record of the dates on which coach and pupil dealt with the trouble, it will be possible to determine the pupil's rate of progress and also to stimulate attention by referring him to the fact that he has already been coached on this type of difficulty several times.

On the reverse of the card the coach might index the types or kinds of difficulties presented and refer to them by

their index letters or numbers. This saves time. The coach will find that difficulties fall in large groups. These are discussed under "Conditions and Hindrances" and also in Part II under the several subjects.

A more elaborate method of recording is suggested in the following blank :

RECORD BLANK OF STUDY COACH
NAME OF PUPIL _____
SCHOOL YEAR — 1st, 2d, 3d, 4th (underscore) _____
PUPIL'S STANDING IN ELEMENTARY SCHOOL BY SUBJECTS _____
PREVIOUS STANDING IN HIGH SCHOOL BY SUBJECTS _____
SOCIAL ACTIVITIES NOW ENGAGED IN BY PUPIL _____
PUPIL'S FAVORITE SUBJECT _____
PREDOMINANT MENTAL IMAGE — VISUAL, AUDITORY, MOTOR _____
TEACHER'S STATEMENT OF PUPIL'S DIFFICULTIES _____

PUPIL'S STATEMENT OF HIS OWN DIFFICULTIES _____

FIGURE VI

Several important factors entering into the pupil's attitude toward studying are called for on this card. Investigations show that pupils as a rule maintain a certain standard throughout their school life. Mediocre pupils in the elementary school are rarely superior pupils in high school. Excellent pupils in the grades as a rule maintain this excellency in the higher classes. It is important for the coach to know something of the intellectual history of the case before him if he is to suggest to the teacher wise and just methods of dealing with the pupil. The social environment preferred by the boy or girl is equally significant. It may be too distracting, too strenuous, or insufficient. The preference of subject matter may mean neglect of this subject because seemingly easy or neglect of other subjects because disliked. Mental type is also significant because it is likely to affect method of teaching. (See chapter on "Individual Differences.")

(2) *Summary.* It is now apparent that the study coach and the unassigned teacher, for both of them may employ similar methods of recording, should be well-organized offices, filled by persons peculiarly endowed for this kind of work. It may not be impossible in schools of education and normal schools to evolve such persons with training in mental testing, statistical recording, methods of teaching, and a working knowledge of the subjects in the curriculum. This is a large order, but public school education is an immense undertaking. It calls for the most efficient service, and some day doubtless will be in a position to demand it and pay for it.

4. **The "Delayed Group" Plan.** This has recently been introduced at Joliet, Ill. It aims to anticipate or prevent difficulties of studying in the first year of the high school by carefully examining the qualifications of entering pupils

for the new type of work. Dr. J. S. Brown, the principal, describes the plan as follows in a personal letter to the writer :

“Our plan, which is beginning to operate, contemplates a careful study of the scholastic qualifications of the eighth-grade pupils when they come to the high school. This study includes the record which they made during their eighth grade and the record which they make in the high school for the first four weeks. On this basis, we take from the entire group the pupils who, judged by their previous record and the opinion of the teacher having them for this month of high school work, will not be able to go in the same pace as is required of the normal school pupil. These pupils are put into a group by themselves and are given a pace for their work which enables them to complete twelve weeks’ work of the semester of eighteen weeks. At the close of this semester there are six weeks work yet to do by such a group. In order to do this work, this group is immediately put into a vacation school extending from the beginning of the week following Commencement until about the beginning of August, or a period of six weeks. The summer school pace is somewhat modified by the fact that their number of studies in such cases is one fewer than in the regular year’s work. By such a means as this, the ‘delayed group’ is enabled to spend about thirty per cent more time in doing regular work than the regular group. In this way, such a group comes back to the school in September with all the work passed, and does not have to enter the second year’s work with any kind of handicap.”

This plan has not been in operation long enough to indicate any dependable results.

5. **General Directions in Studying.** In some schools the importance of guiding pupils is recognized by giving platform talks on study at the beginning of the term or during the session. Teachers sometimes spend part of the period in

suggesting how to study. Four of the best methods of this type of supervised study will now be considered.

a. *The Study Program.* W. C. Reavis¹ has found a Pupil's Study Program helpful. Cards with duplicate copies for filing in the assembly-room desk are handed to each pupil. One side of the card contains a schedule of hours, the other side several directions on how to study. The following figure shows the form.

PUPIL'S STUDY PROGRAM		
NAME.....		GRADE.....
Hour	Study	Recite
9:00		
9:45		
10:30		
11:10		
1:15		
2:00		
2:45		
3:20		

(over)

FIGURE VII

¹ "Importance of a Study Program for High School Pupils," *School Review*, June, 1911, Vol. XIX, pp. 398-405.

This card indicates the pupil's division of time during study hall periods. The teacher in charge of the hall is then enabled to supervise the pupils while carrying out the schedule. On the reverse of the card is printed a list of directions.

DIRECTIONS FOR STUDY

1. Follow your program regularly.
2. If possible, study your lesson immediately after the assignment is made.
3. Take brief notes and afterwards restudy by outline.
4. Use dictionary and reference books for points not clearly comprehended.
5. Concentrate your mind so that outside interests will not frequently disturb your study.
6. Do not try to commit exact words until you understand their content.
7. Connect the important facts of the new lesson with facts previously learned.
8. Make comparisons and contrasts when possible.
9. Carefully review and think over the previous lesson before beginning the next.
10. The extra effort spent on preparation pays the greatest intellectual dividends.

Here is a conscientious attempt to direct pupils while at work on their lessons. It is a plan easily adapted to any school. The test of effectiveness is stated by Mr. Reavis in the article already referred to. He says:

"During the two and a half years that study has been closely supervised and regular programs for each pupil strictly followed, three things have been accomplished with more or less success: (1) the problem of discipline has been practically solved; (2) con-

siderable improvement has been made in scholarship; (3) regular hours of home study have been provided for by the large majority of the students."

The benefits of the method are reported by the pupils as follows:

1. By following a definite program of study I have formed the habit of studying a certain lesson at a certain time, and because I know that I must study at that time I am always ready.

2. If a definite program is followed, I can do more and better work than if I study in a haphazard fashion.

3. When following a study program one is never in doubt about what to do next.

4. A study program keeps me from spending too much time on favorite subjects.

5. By following a regular program I waste no time in thinking about what I shall do next. Then, too, it keeps me from changing tasks when I begin to tire of what I am doing.

6. By preparing my work regularly I find that I not only have better lessons but also have more time for leisure.

7. The study program has proved so beneficial to me in the preparation of my lessons that I now follow a regular program for all of my work.

8. I find that by following a regular program of study I always study each lesson, whether I accomplish anything or not. At least I always know something about each lesson.

9. I had the habit of always putting off my work until I felt just right for study, and as a result made very poor grades, but since I have adopted a regular study program my interest in my work has greatly increased and I am no longer ashamed of my grades.

The benefits of this plan then are: (1) improved discipline; (2) finer scholarship; (3) regular hours of home study; (4) systematic organization of the pupil's time; (5) aid in starting to work; (6) balanced studying; (7) saving of time by knowing what to do next; (8) provision for needful leisure.

The technic of the plan has been sufficiently described in the foregoing. The success of the scheme depends obviously on the teacher's loyalty to her part of the work. If the duplicates are not referred to and if the pupils are allowed to neglect this schedule, the plan fails. There must be a pilot — an overseer who is alert on duty.

b. *The Giles Scheme.* A similar method of directing habits of study is employed by F. M. Giles at DeKalb, Ill., Township High School. He does not use the study-program card, however. Instead, a bulletin is handed the pupils. It contains the following directions:¹

1. *Study away from interruption.* — Have a definite place for study where you won't be interrupted.

2. *Concentrate.* — Put your attention on your work. That is, don't let your mind wander to what people are saying, to look out the window, to think of other things. In other words, concentration helps study.

3. *Get regular study habits.* — Have a definite time for study. Make up your mind always to have the same time for your work and in the end you will get a habit so that work will be easier.

4. *Understand the topic.* — In starting to work on your lesson be sure that you understand it. Do not try to study topics that don't mean anything to you. If the trouble is in words, get your dictionary and look them up. If the trouble is in the topic itself, ask the teacher to help you. Men who know tell us that it is much easier to learn lessons when they are understood than it is when the person does not understand them. Take advantage of this fact.

5. *Reason about it.* — Read the lesson over as a whole, then try to pick out the important points in each paragraph. A well-written paragraph has one topic. Do not try to learn everything in the lesson, but pick out the chief things and relate the minor topics to

¹ See *School Review*, November, 1914, pp. 635-636.

them. It is a good plan to underscore the most important sentence in each paragraph. But don't underscore four or five sentences. Too much underscoring is worse than none. Next make out a list of the most important topics in the lessons.

Then, having closed your book, try to give the most important facts about these topics out loud, or write out the material on paper. Do not open your book for help if you cannot recall a topic. Do the best you can until you have been over the whole lesson. Then open your book and see what you have failed to recall.

6. *Review often.* — If you can, study your lessons at two different times, that is, study it at night and review it in the morning before going to class. Men who have studied the way the mind works tell us this review helps one to remember.

7. *Recite and review again.* — *Repeating what you know* and *review* are the most important parts in mastering any material whether a rule in mathematics, a topic in history, or a principle in science. It is a good plan to review hard topics from week to week.

8. *"Will to learn."* — Finally, make up your mind that you *can learn*. It has been found from experience that when people have the "will to learn," the mind will work much more easily. Do not say, "I can't learn it. I am not interested in it." When you get this attitude it is almost impossible to do successful work.

9. *Talk over your work.* — Talk over your school work at home. Tell about the interesting things in history, in English, or in science, or your hard problems in mathematics. This will help you master your work.

Here are directions that stimulate the pupil to regard studying as something improvable. The supervision of study at DeKalb is referred to also in the next chapter.

c. *The University of Chicago Plan.* At the University High School of the University of Chicago, the following list of suggestions formulated by teachers in mathematics and by the librarian have proved to be very valuable.

STUDY HELPS — FOR STUDENTS IN THE UNIVERSITY HIGH SCHOOL

The habits of study formed in school are of greater importance than the subjects mastered. The following suggestions, if carefully followed, will help you make your mind an efficient tool. Your daily aim should be to learn your lesson in less time, or to learn it better in the same time.

1. Make out a definite daily program, arranging for a definite time for each study. You will thus form the habit of concentrating your thoughts on the subject at that time.

2. Provide yourself with the material the lesson requires; have on hand maps, ruler, compass, special paper needed, etc.

3. Understand the lesson assignment. Learn to take notes on the suggestions given by the teacher when the lesson is assigned. Take down accurately any references given by the teacher. Should a reference be of special importance, star it so that you may readily find it. Pick out the important topics of the lesson before beginning your study.

4. In the proper use of a textbook, the following devices will be found helpful: index, appendix, footnotes, maps, illustrations, vocabulary, etc. Learn to use your textbook, as it will help you to use other books. Therefore, understand the purpose of the devices named above and use them freely.

5. Do not lose time getting ready for study. Sit down and begin to work at once. Concentrate on your work, *i.e.* put your mind on it and let nothing disturb you. Have the will to learn.

6. In many kinds of work it is best to go over the lesson quickly, then to go over it again carefully; *e.g.* before beginning to solve a problem in mathematics, read it through and be sure you understand what is to be proved before beginning its solution; in translating a foreign language, read the passage through and see how much you can understand before consulting the vocabulary.

7. Do individual study. Learn to form your own judgments, to work your own problems. Individual study is honest study.

8. Try to put the facts you are learning into practical use if possible. Apply them to present-day conditions. Illustrate them in terms familiar to you.

9. Take an interest in the subjects taught in school. Read the periodical literature concerning these. Talk to your parents about your school work. Discuss with them points that interest you.

10. Review your lessons frequently. If there were points you did not understand, the review will help you to master them.

11. Prepare each lesson every day. The habit of meeting each requirement punctually is of extreme importance.

d. The Twin Falls Study Outline. At Twin Falls, Id., Mr. Dowman, the principal, in coöperation with the superintendent, Mr. Hal G. Blue, hands each pupil a copy of the following "Study Outline." It is cited here in full as an example of painstaking, thoughtful interest in opening up the science of study to the pupil.

STUDY OUTLINE

Trying to achieve something without a plan is very ineffective. To obtain success in any undertaking requires that a plan of action be thought out and followed closely. The lawyer must carefully plan his case; the instructor must plan the work of a course of study and develop its parts from day to day; the farmer must plan the rotation of crops and the care and culture of a particular crop. This same policy as to a plan must be followed by students in high school. Certain fundamental principles govern one's ability to study and learn. These must be mastered before one can reach efficiency in acquiring an education. The first principle of learning that one should master is that of:

A. Understanding:

1. Be sure that you understand. Be honest with yourself and try to discriminate between what you think you know and what you are sure you do not know. This attitude will be of great value to you in your endeavor to learn. Hazyiness of understanding leads to guessing and a lack of mental insight.

2. Life demands that people who have formed habits of accuracy do the world's work. It is disastrous to think that your efforts are scholarly or of much value simply because you have the right principle in solving a problem. Inaccuracy in any profession or position is fatal. The best colleges and universities are eliminating from their student body those who cannot think with accuracy.

The second step in studying is:

B. Systematizing:

1. In studying a lesson, systematize the material in the lesson. Endeavor to see the important things and their relation with one another as well as with that part of the subject which you have previously studied. If you can do this, you will have taken an important step toward efficiency in learning.

The third step is:

C. Associating:

1. Try to associate the new materials acquired with other matter of a similar kind. This will enrich your knowledge and give you such a grip on it that it will stay with you and be of real value to you.

The fourth principle is:

D. Remembering:

1. Your memories cannot be cultivated, but your ability to remember depends entirely on the way you learn. If you understand what you study, if you associate the new things learned with other knowledge of a similar nature and see their relations, if you systemize your daily work and play and also the subject matter of each lesson, you will then remember. Memory is of great importance. The world of affairs demands men who can both think and remember.

In order to become master of the above principles, *i.e.* understanding, systematizing, associating, and remembering, the following suggestions may be helpful to you :

a. Be sure you understand the directions of your teachers and then follow them.

b. In studying many of your lessons, such as history or English, it is well first to read the lesson over as a whole to get a bird's-eye view, then study it in detail.

c. Put your attention on your work and be sure you understand it. Concentrate on the matter at hand. Try to discover the main points of the lesson and express them in your own words.

d. Talk over your lessons at home. This will aid your understanding and memory of them greatly.

e. Have you a definite place to study and where there are not distracting influences?

f. Keep your study room well ventilated.

g. Keep windows of your sleeping room open.

h. Have a definite time to study. Study regularly a certain portion of the time each day and get some wholesome recreation each day.

i. Do not "dilly-dally." When you study, make a serious business of it. Work hard while at it and train yourself to study rapidly and with accuracy. The hardest and fastest workers are the most accurate.

j. Review often. Do not wait for your teachers to give you review lessons or a systematic review of a subject. Whenever you find that you do not understand a lesson because of haziness of knowledge previously gained, make an independent review of your own of the course.

k. Use all aids available. Ask questions of your teachers concerning things you do not know. Remain after school hours to get aid in your work. Consult reference books, magazines, pictures, diagrams, laboratory apparatus, and any other aids you may be able to appropriate.

What has been attempted by the educators cited and also by others is within the reach of every principal and every teacher. May it not be true that if teachers dealt more with *studying* than with *reciting* the pupils would respond with more alacrity? If teachers showed an intelligent interest in correct and economical methods of work, it is not unlikely that the pupils would regard studying with more earnestness.

GENERAL SUMMARY

The foregoing general methods of supervised study, with the exception of the Assembly Study Hall, may prove very effective as corrective agencies when high school pupils find studying unsuccessful. The main criticism to be offered against them is that they are chiefly, if not exclusively, corrective. They do not allow for any definite or prolonged instruction in how to study each assignment. Probably, in the great lack of teachers who can teach pupils this important branch of school life, it is better to seek for the expert and give him or her the task of supervising studying. The presence of such an expert indicates that the school authorities sense the problem and are attempting to find a solution in the most effective manner. It remains true, however, that every teacher must become a study expert, with all that this means.

CHAPTER VI

THE ORGANIZATION OF SUPERVISED STUDY

(Continued)

The Importance of Specific Direction in Study. In the preceding chapter discussion was limited to schemes of supervised study that make no attempt to give formal instruction in study but aim to help the pupil to overcome difficulties in preparing lessons. It was pointed out that these plans are chiefly corrective or only generally directive. The highly trained study coach, to be sure, is in a position to diagnose "cases" and suggest methods of dealing with such pupils in the regular class work. The schemes, however, fail to take into account the fundamental need of so revising present classroom procedure that considerable time may be devoted in every subject to training in and supervision of study. The methods to be considered in this chapter are organized with this purpose in view. Teachers using these methods spend much time in individual instruction. Home study is minimized and in some schools wholly eliminated under these types of study administration. The school work stresses study rather than reciting. These plans will now be discussed in detail.

II. SUBJECT ORGANIZATIONS

These include various forms of divided periods, study periods, and occasional supervision.

1. **Divided Periods.** These are modifications or elaborations of the early Batavia plan evolved by Superintendent John Kennedy in the town of Batavia, N.Y. The origin of the plan was the usually overcrowded schoolroom, in this case of over sixty pupils in an elementary grade. To relieve the teacher of this crowded room, Mr. Kennedy put in an additional teacher. The additional teacher, Miss Lucie Hamilton, was not an assistant but an associate teacher with a specific type of work to perform. The pupils in the class who for various reasons were retarded were given in her charge. Her work was similar to that of the unassigned teacher, only here she was a regular teacher in this room and her efforts were confined to the pupils of this particular grade. The result of this work far surpassed expectations. Retarded, indifferent, restless children awoke. Their attitude toward the class and the teachers became enthusiastic. Similar results were obtained by adding teachers to other rooms.

After the plan had been in operation for a year, it occurred to the superintendent that the fundamental reason for improvement lay not in having two teachers but in employing two wholly different methods of teaching. Class instruction supplemented by individual instruction was really the secret of the great change. It seemed worth while to try another method, — namely, dividing one teacher's time between the usual recitation and supervised study in the same period. It met with success in two grade rooms and in rooms with many grades.

The Batavia, or Divided Class-Period, plan has been introduced into many high schools with success equal to that at Batavia. It means, essentially, the abandoning of the usual "question and answer" type of recitation and stressing

coöperative assignments, the teacher working *with* the pupils, *not for* them, in the preparation of the new lesson. Several forms of the divided period have been developed. These will now be considered.

a. The Newark Plan. Principal William Wiener, at Newark, N.J., has found that the divided period is far superior to the traditional type of class period. At first he divided a sixty-minute period equally, devoting the same amount of time to recitation and to study, with five minutes between periods for transit to and from classes. In the chapter on "Results of Supervised Study" are given some tables illustrating the benefits of this type of study supervision at Newark. The length of the period has been reduced by Mr. Wiener so that now twenty-five minute halves are in vogue in each period. Each teacher using the method provides for suitable instruction in how to prepare the assignment just given. Home study is minimized or wholly eliminated, the additional amount of study necessary being provided for during the vacant periods. Under this plan the school day is broken up into fixed recitation and fixed supervised-study periods, each beginning and ending by bell signals.

b. The Columbia Plan. This is somewhat different in being more flexible and in allowing as a rule more time for study than for recitation. Dr. J. L. Merriam, principal of the University High School at Columbia, Mo., believes in stimulating interest and effort by abandoning the usual form of instruction where pupils are assigned certain seats and are expected to remain seated for the greater part of the period. The high school pupils in this school are given unusual privileges. The classroom resembles more nearly a small reading room than a recitation hall. Pupils while at work

may pass back and forth as they find it necessary to consult reference books or other material. The recitation room is essentially a workshop where teacher coöperates with the pupil, where pupils are constantly supervised while engaged in studying. About one third of the period is devoted to recitation proper, but this amount of time is flexible.

Dr. Merriam conceives of the class period in every subject as essentially a laboratory hour, — not a reiteration or memory exhibition. The important thing is to arouse pupils to work constructively and economically. In a class where pupils realize that marks and promotion depend upon evidence of individual effort, day after day, rather than upon occasional opportunities to answer questions or work frequently not the pupil's own achievement, it is likely that study will be regarded as an end in itself — the very act or effort of working will be deemed as important as the finished recitation.

(1) *The Organization of Columbia Plan.* Teachers in the University High School are given a list of Directions to Teachers containing helpful and definite guidance in the supervision of study. The following extracts illustrate the excellence of the directions :¹

PURPOSE IN THESE DIRECTIONS

1. To make the class hour and individual work more effective by more definitely differentiating between recitation, class study, assignment, and home study. We easily drift into habits of looseness which seriously affect results. I wish this avoided as much as possible.

¹ Dr. Merriam very kindly sent the author a copy of his "Directions," with permission to make copious citations. Dr. Merriam is planning to publish a *Manual of Supervision* which will contain the directions in complete form.

2. To raise the standard of the work :

1) By making the recitation more sharp and positive (but bear in mind that this portion of the class hour should be more and more reduced).

2) By making the class study an exercise more helpful in teaching students how to attack a new problem.

3) By making the assignment more definite, as an outgrowth of class study.

4) By obliging the student to feel greater responsibility in his individual work.

DIVISIONS OF THE CLASS HOUR

1. Recitation		8.10 to 8.30 (or earlier)
2. Class study		8.30 (or earlier) to 8.55
3. Assignment		8.55 to 9.00

3. In many cases the recitation time can be shortened, as I wish "class study" emphasized. Time needed for assignment will vary; sometimes more, sometimes less. Sometimes assignment is so readily inferred from the class study that no formal assignment is at all necessary.

In another section of his "Directions," Merriam adds the following "Note of Importance" :

The recitation here proposed is only a compromise. *Eventually, no recitation, as such, is needed.*¹ Above all things, teachers must beware of directing class study or home work as a preparation for recitation. The traditional recitation cannot be dropped from the high school as abruptly as has been done in the University Elementary School. But until this is possible the recitation portion of the class hour must be made more effective than at present prevails.

Under the head, Nature of Class Study, are a group of directions that can hardly be surpassed. The following extract is in full :

¹ Italics not used in the original.

NATURE OF CLASS STUDY

1. Class study is the opening of the study of a specific topic or problem.

2. This class study is under the direction of the teacher who has previously studied out such topics for the purpose of helping others to study it. Such preparation is quite different from that of a student. *Method of study* is the chief problem of the teacher in her preparation. The teacher should be constantly directed by the question. "What do I wish my students to do in studying this topic?"

3. Such class-study is usually upon the basis of certain facts or data previously collected by the students. For example:

1) In English literature: Students have read certain pages, chapters, or selections; they are fairly familiar with the story, the facts or the plot.

2) In history: Students have read in the texts or reference books material bearing upon a given topic, *e.g.*; the causes of the American Revolution. They are in possession of the more important facts.

3) In botany: Students have collected certain plant forms from laboratory cases or from the fields. This material is before them for study.

4. This class-study may well be opened by the teacher — or students stating *a* problem or *the* problem, for the study of which these facts or data collected contribute much. (In this connection keep in mind the note given at the close of this section.)

5. Study and recitation are to be carefully distinguished. For example: Sight translation in a foreign language is not study, but looking for probable or possible subjects and predicates, finding difficult or peculiar constructions, etc., is study. Guessing at interpretations in literature and history is not study, but reasoning about the data at hand is study.

6. The *library* and *laboratory* method of work is the method of "class study." Open books are needed. Notes may advisedly be made even in the books (*i.e.*, the students' books). The student-teacher is reminded of the eight "factors in study," discussed by McMurry in his book *How to Study*. But one's class work must not be too closely directed by those eight factors. Study is essentially the working out of those means that lead to the accomplishment of one's purposes.

Note of Importance. Much of what is presented in this section as class-study is due to the curriculum which tradition has given us. The problems of purpose in this class-study are largely mapped out for us by the subject chosen and the text used. For example, how reasonable was the attitude of the colonists toward "taxation without representation." This interesting problem is discussed in class because the facts involved are met in a given text used in a specified course of study. Contrast this with reading current literature on Woman's Suffrage. In the latter case, the problem presents itself to us in the course of normal life: reading and study is pursued as a means of helping us solve the problem. In the former case, the reading material is presented to us — a problem for study is formulated to suit the data before us. Until our high school course of study is changed to a study of contemporary life, our purposes or problems in class-study must be largely determined by the subject-matter which tradition has given us. Thus much of the class-study proposed above is a compromise.

2. **The Double Period.** The inception and development of this unique plan are due to Dr. J. Stanley Brown, principal of the High School at Joliet, Ill. It will be an advantage to read Dr. Brown's description of it:¹

a. The inception of this plan in our own school did not grow out of the experience in any other school or from any other plan. Only

¹ *School and Home Education*, February, 1915.

four or five years ago did we begin to make a careful tabulation of the percentage of failure in each subject each semester, and I am sure that it was due to the fact that this percentage seemed to us entirely too high that the experiment, which we began to carry on three or four years ago, had its origin. The experiment was tried first with the mathematics class in algebra because the failure seemed to be greatest in that place. It was extended then to geometry and seemed to produce better results than the preceding plan in that subject. It has now been extended so as to include practically all of the mathematics of the first two years, all of the foreign language, Latin, French, and German, of the first year, all of the English of the first year, all of the Science of all the years including the domestic science and manual training. Our procedure from one subject to another and from one year's work to another has been a gradual one and has been made only when the facts set forth at the close of each semester seem to justify such extension of work.

In general, our double period scheme, as we call it, means that the first period of the two, each 40 minutes long, is spent in the conduct of the recitation; the second period is spent in directed study with whatever assistance may be found necessary, according to the need developed either during the preceding recitation or the examination of the lesson for the following day. The double period plan has been introduced this year for the first time in all of the first year English classes. The amount of the teacher's work, under the new plan, is not greater than under the old plan, but the effectiveness of the work is its main point of defense.

The interrogation which is made always by the people who visit these classes to find out what this sort of study means is: "Don't you find that pupils are given so much help that they are weak in the succeeding work and that you direct them so much that they lose their initiative?" This is a very natural inquiry and of our faculty of sixty-six we have two people who are inclined to think there is reason for these questions. At the same time, both of these

people are unwilling to accept a single period of recitation and have their work compared with the work of another teacher who has a double period. We are ready to answer both of these questions in defense of the scheme because we have carried on this scheme long enough to see what pupils do in their succeeding work. My own observation leads me to say that the number of teachers I have found in any high school giving too much help is far smaller than the number giving too little.

This scheme cannot be carried on successfully where the school is too small to justify the employment of ten or a dozen teachers. It cannot be carried on successfully unless the conditions necessary for its success are provided before its operation begins. The element of specialization enters quite largely into the scheme; hence, the larger organization with the larger number of students and the larger number of teachers favors the working of the scheme. The scheme will probably fail if adopted in schools with a small number of teachers having to teach three or four different subjects during the day. The library scheme in history will fail where there is not a well equipped library. The laboratory scheme will fail where the apparatus is not sufficient in quantity to enable individual work. The double period scheme will fail where teachers are unwilling to carry out faithfully and accurately the plan for its operation. It is likely to find opposition on the part of all teachers, men and women, especially women, who are opposed to the lengthening of the school day. Even though that does not provide a larger number of classes, it is sometimes charged against this scheme that the continued effort at keeping students keyed up and alert for a long period of time will make them stale for the last part of the day. This would have some defense in it were it not for the fact that gymnasium exercises are daily required of all pupils in the first year and that the freshening and recreative resultant of passing from one building to another a block away seem sufficient, not only to prevent staleness and drowsiness, but to insure continued alertness on the part of the students. This scheme is, like all other schemes, dependent largely

on the sympathetic and enthusiastic attitude of the teacher for its success. This scheme proposes abolishing home study largely, if not entirely, and confines study to the school building where the library is, where the laboratories are, where the manual training and domestic science equipment is, and above all, where the teachers are. Our observation and investigation leads us to the belief that a great part of the so-called home study is time ill spent, when we consider the small return for the large amount of time. The teacher has no real evidence that the theme written at home is the real effort of the pupil, or that the prose composition in foreign language when prepared at home is the real effort of the pupil. Work done under the eye of the teacher, under the direction and supervision of the teacher, inculcates a kind of personal honesty which it is difficult to inculcate outside of such supervision.

The time ought never to come in this country when the individual should be styled a teacher if he thinks that his function as such has been properly performed after he has assigned a lesson and heard the boy recite it. This dwarfed, shrivelled, and mediæval type of teacher ought to be assigned to a work dealing with inert, non-sentient material, but not with human, living, pulsating, growing life. Supervised study reaches its greatest defense in a teacher in whom the qualities of sympathy and interest, inspiration and magnetism and human uplift are dominant.

The enrollment of the Joliet High School is nearly 2000. With nearly seventy teachers it is possible to achieve well-nigh marvelous results. Mr. Brown believes in shifting the outlet of school costs from the far to the near end, in spending money to *prevent* repeaters and retards rather than to improving abnormal cases. He says:

“This plan means a larger number of teachers to operate it. Our scheme means five teachers where, under the older plan of procedure, we had four. We have estimated, however, that the percent-

age of repeaters, under the old plan, has been sufficiently reduced by the new to meet the financial difference in the cost between the two plans of operation.

“In all of the modern language classes in which the direct method is used, there is no very great difference between the use which the teacher makes of the first period, but the modern language teachers are a unit in the opinion that this double period scheme justifies itself in the fact that almost no work outside of the school building is necessary on the part of the pupil. The percentage of failures in modern language has been very largely reduced. The consequent saving in teaching force, due to less numbers of repeaters, is apparent.

“The use of this double period in first year Latin is defended by all the teachers of this subject on the ground that an uninterrupted effort for two periods, with but a trifle of a break of three minutes between, enables them to so connect up the work of one day with that of another day that the pupil accomplishes more during this practically continuous effort for two periods, under direction, than he could accomplish with three or four disconnected periods without direction. In this subject, also, the percentage of failures has been largely decreased and the consequent number of repeaters decreased.

“In beginning algebra, which is offered in the first year of our school, our percentage of failures before the introduction of this scheme was sometimes as high as thirty. Since the introduction of this scheme, which in the case of algebra has been continued longer than in any other subject, the percentage of failure has been reduced about fifty per cent. The same deduction may be made here with reference to the number of repeaters as was made above. The directed study in the case of algebra is very different from that of either beginning Latin or beginning German or French. The opportunity to help, legitimately and immediately, when the pupil has made an honest, faithful effort, means much more for the pupils' progress and interest in the subject than if such suggestion or help is postponed for twenty-four hours or until the pupil comes into

the class the next day. The element of encouragement and interest in the subject tends to grow in the right direction if help is administered immediately when needed.

"The subject of geometry is not approached in precisely the same way as the subject of algebra and necessarily differs greatly from the linguistic studies. It must be largely freed from the memoriter kind of work and must be given time for the young minds to reason slowly and in logical steps. After the first period of recitation the teacher has had an opportunity to know who needs assistance and where that assistance must come, and in the discussion and direction of the work for the following day he has an opportunity to make immediate use of all of the developments of the recitation which has just closed. This is another case of "striking while the iron is hot" and not giving it twenty-four hours to cool before it is struck again.

"The double period in all of the classes of the science work differs from all the other classes because they spend four days of the week in the laboratory in the performance of experiments, only a single day of the week being given to formal recitation. The fact that the double period is set aside every day for this science work and the fact that the teacher has the opportunity to plan the work on this basis, seems to the science teacher a very much better plan than any that has been yet tried. In all the first year science it is not found necessary for the pupils to spend more time than is provided in two periods. The direction of their work and the close supervision of the teacher makes it possible to accomplish, during these two periods, what was with difficulty accomplished in a single period of recitation followed by undirected work in two periods outside the laboratory.

"The history department is using a scheme somewhat different from all the rest because a single period of recitation is followed by directed work in the library. The history department feels, at the beginning of this experiment, that the ability to use the library effectively is one of the greatest aids to all history work, and that, if this power is developed during the earlier years of the high school

course, it may be utilized with great advantage in all succeeding work. We are not ready to pronounce upon this plan, because this experiment is yet in the trial stage. It finds its defenders, however, in every member of the history department and in the pupils because it is rarely necessary to spend much time outside of the school building."

The plan in English is somewhat different. One of the teachers in this department describes her method in the following words :

"The second period is used primarily for supervised study. If the work is very difficult or if a great deal of explanation and instruction is necessary, a part of this time is used for recitation. Since the second period is intended to be used for study under the direct supervision of the class teacher, it does not seem wise nor fair to spend too much of this time in recitation.

"The lesson for the following day is assigned at the beginning of the second period. The period is used for the study of that lesson. I help the class in various ways, but I take great care in determining the amount and the kind of help I give. I have in mind that the pupil is to be taught to study and to be independent in his work. A legitimate number of questions are answered and difficult passages in the text are explained. I refuse to pronounce, spell or define words. The child is sent to the dictionary. If he does not understand the explanation, I assist him. When themes are assigned, the first draft of the composition is written during the second period. Often the pupils correct and re-write the themes that I have corrected and returned to them. While this is being done, I spend some of the time giving individual help to those who do not understand the principles of composition and to those who have difficulty in correcting their work."

So far as the writer has been able to learn the double period is used only in Joliet, Ill. With the advantages claimed for it

by a principal with the long experience and thoroughgoing progressive methods of Mr. Brown, it deserves adoption, at least experimentally, in schools large enough for such a schedule. Unquestionably it has proved successful in Joliet. The writer has visited the school, and observed the process of study supervision in a few of the classes. It is an easily defensible scheme for schools with faculties numbering at least fifteen.

b. General Technic of the Divided and Double Period. The question is frequently asked by interested teachers: What do you do — how do you keep the pupils busy? Some teachers fear that there will be a great amount of time wasted. Others believe that there will not be sufficient time to complete the course of study. Others, again, think that the pupil will have nothing to do after school hours if most or all of the assignment is prepared in class or at school. It is necessary, therefore, to consider the general procedure of the divided period and to offer a few suggestions that will aid the teacher to begin this work with confidence and prosecute it without loss of time. The more detailed procedure in connection with each subject is dealt with in Part II.

(1) *The Teacher's Preparation.* The first step in successful supervision of study deals with the teacher's organization of the term's work. It is essential that teachers under any method of teaching have a perspective, — a map, — a detailed plan of their work. The subject must be broken up into large divisions, called *units of instruction*, — big topics that are the main vertebræ of the course. In American history, for example, these would be the periods of discovery, colonization, Revolution, Civil War, etc. The Table of Contents in the textbook provides a basis of such units of

instruction. The course should consist of what Charles McMurry calls "type lessons," big movements, institutions, or industries. In commercial geography, mining, irrigation, cotton, canals, would be units of instruction, rather than rivers, erosion, climate, currents, which are subtopics.

Having selected these big units of instruction, the teacher should in the next place schedule the sub-topics, or *units of recitation*, — the topics to be studied each day. Some topics can easily provide for this variety of length. Next comes the daily assignment, or *unit of study*. Here the teacher must exercise considerable judgment in making the assignment reasonable, — neither too short nor too long, — and also in weighing its parts, and giving due emphasis of explanation where this is most needed. If, in addition to the foregoing, the teacher employ a variety of Lesson Plans, or Lesson Types, as referred to by Strayer¹ and Earhart,² the scheme of preparation will be practically complete.

The teacher's preparation, as described, can be planned in book form as on following page.

The book should be large enough to include all of each day's recitation on the two pages as described. On the left-hand page is stated the big topic, or unit of instruction, which forms the broad background of the day's work. The dates — beginning and close — of the treatment of this topic are stated also as daily checks on the amount of time devoted to each day's work. This is followed by a statement of the more specific topic under discussion. Here is the "local station" en route. The unit of study is smaller than the recitation unit, for it refers to the pupil's part of the day's work, or the amount of preparation the teacher requires him

¹ *The Teaching Process.*

² *Types of Teaching.*

SAMPLE PAGE FROM TEACHER'S PLAN BOOK

UNIT OF INSTRUCTION _____ DATE _____	DEVELOPMENT OF LESSON
UNIT OF RECITATION _____	LESSON TYPE _____
UNIT OF STUDY OR ASSIGNMENT _____	
DATE _____	
LESSON TYPE TO BE USED IN TREAT- ING ABOVE ASSIGNMENT.	
REFERENCE BOOKS _____	
INDIVIDUAL ASSIGNMENTS OR RE- PORTS _____	

LEFT PAGE

RIGHT PAGE

FIGURE VIII

to make on the unit of recitation which is being developed coöperatively by teacher and pupil. By selecting a good while ahead the kind of lesson type to be employed, the teacher will be able to find illustrations and reference material, much of which would lie unnoticed without some topic or mode of procedure drawing it into the teacher's experience. Reference books, including magazines, can be selected a long time in advance of the lesson and procured if the teacher

has her work well planned. Individual assignments with the name of the pupil selected for the special work should also be recorded. This is especially important in supervised study where much of the work is by small groups or individuals.

(2) *The Assignment.* Much has been said about the assignment, but there is no danger of overstressing this vital part of the teacher's work. Teachers only too frequently ignore the second syllable of the word assignment. It is, or should be, a clear sign pointing the way to go and giving detailed directions for reaching the destination. Signs call attention to the unusual or to something that persons are stimulated to want. The assignment in school work has similar functions. It deals with something new — it must be made attractive enough for the pupils to want its material. It must state *clearly* what is offered or expected, *where* to get it, and *how* to get it.

Supervised study is simply an elaborate assignment or a cooperative assignment. It can never be too specific — never too clear. The proof of this last statement is furnished by Breslich: ¹

That in beginning classes of the high school, suggestions given with the lesson are not sufficient to enable the pupil to do his work, and that the pupil's difficulty in studying his lesson is much greater than is generally assumed, is illustrated by the following occurrence. The parents of a pupil just beginning first-year mathematics in the University of Chicago High School complained to the teacher that the daughter came home day after day with home work assigned but with no idea how to do it. The girl had told them it was the

¹ "Teaching High School Pupils How to Study," *School Review*, October, 1912, Vol. XX, pp. 505-515.

teacher's custom to assign problems with no suggestions. Feeling that this procedure was unreasonable, the parents spent the evening hours working the problems and explaining them to the child. When they were unable themselves to do the work, they called on a ministerial friend living in the next block, who was good in mathematics and kind enough to help. Finally the parents came to the teacher and complained: "Sometimes even all of us cannot do the work you assign, how do you expect her to do it alone?" The teacher was surprised to learn that, after all the careful preparation in the classroom, a pupil, no matter how slow, should not even know that suggestions were given. Asked whether any suggestions for the next day's lesson were given, the girl said she knew of none. To satisfy the parents, the teacher took a quarter of an hour to go over the preparation of the lesson with the parents and daughter exactly as had been done in the classroom. It was found that the girl remembered it all, but failed to see how it would help her to study her lesson. It was now the parents' turn to be surprised. They went away feeling that the child, not the teacher, was at fault.

This experience shows that in giving out an assignment several things are fundamentally important. *First*, the limits of the new lesson must be clearly defined. This is not always done even in universities. *Second*, directions of study must be so labeled. The teacher must preface the remarks by saying: "Here is the best way to prepare or to study the lesson for to-morrow." One dare not assume that high school pupils are alert every minute of the period. Clear-cut, signal directions are necessary, spoken in a loud (not shrill) voice, and plain language. *Third*, explanations should follow. A problem, if in mathematics, should be worked on the board. A sample of the kind of work required should be shown — usually best selections from other classes are excellent illustra-

tive material — and in detail the merits of the sample commented on.

Supervised study, however, goes one step beyond the foregoing. Explanations may be clear. The pupil thinks that he can study the next lesson without any trouble. But when he actually finds himself so engaged, unexpected difficulties arise. The model example, and the explanations were clear enough, but how do they apply to *this* problem, to this section of the lesson? The process of association has been blocked for some reason. At this point it is important to supervise the pupil's work. This can be done during the supervised study period. The assignment now becomes individualized. Explanations are now made to individuals, not to the class. The teacher and pupil together apply the explanations already given the class, thus starting the pupil on a right method of attack.

The assignment may be of various kinds according to the subject. The following kinds are in use:¹

1. Page assignment — “take so many pages” or “take from page oo to page oo.”
2. Paragraph assignment — “In the next lesson omit paragraphs so and so, and study especially paragraphs so and so.”
3. Topic assignment — “For to-morrow study (name of topic).
References —
4. Problem assignment — (a) Stated by teacher in form of a large question, or

¹ Dr. Henry W. Holmes of Harvard University informs the writer that one of the graduate students of the Division of Education is investigating the most effective kind of assignment, according to the dominant mental processes it will call for. It is hoped that the investigation will aid in determining what modes of assignment bring the best results in each particular type of study.

(b) A number of questions are given out, the answers to be ascertained by the pupils, or

(c) Pupils frame their own problems in connection with the general assignment; *i.e.* they discover issues, questions, crises, difficulties as in history or in literature — also in science.

(d) Grouped assignments — special reports or investigations.

The page assignment is the most difficult of all, for it assumes that the pupil will know how to select the important material, how to organize it, and how to prepare for reciting what he has tried to learn. It has been called an “ideal” assignment in the sense that pupils should be trained to work with a minimum amount of direction. It probably is “ideal” more in the sense of lying beyond the pale of high school possibility. Definiteness — “a goal idea” — is necessary to best work even in graduate departments of universities, but it is difficult to form such problems, such definite tasks even in the highest walks of intellectual life. The high school pupil can well afford to spend four years in being trained to work on definite assignments.

The other types of assignment referred to aim to keep the pupil from scattering energy and thereby producing “loose-jointed” recitations. The problem assignment advocated by John Dewey, Frank McMurry, and others gives the pupil a specific task or series of tasks. At first it will be necessary for the teacher to state most, if not all, of the problems in the new assignments. The large end in view, of course, should be to arouse and train the pupil’s ability to discover problems for himself. This, however, is a well-advanced method of studying and comes only through careful instruction in organization of textbook and similar material, the pupil’s list of questions on the assignment, and various kinds of

“socialized recitations” involving reports on civic or community activities or reports on any phase of common day existence.

Considerable background is necessary for the recognition of problems, issues, or specific purposes. A problem is a felt need to reorganize past experience and to gather supplementary material in order that past and new experience together may answer the question raised, settle a dispute, remove doubt, or satisfy any need involved. The pupil must see the problem, understand its meaning and the material and method necessary for the solution. Mere abstract, general assignments will not awaken personal interest in the problem. The pupil must feel its importance for him, its relation to his sphere of life. Experience in the large must become experience individualized. This is a lofty conception of social efficiency; namely, that the problems of society are after all the individual's own problems. Assignments, therefore, should include this personal interest. Teachers must be able to assign lessons by appealing to the individual interests of each pupil. Concrete, real, familiar situations should be used.

The foregoing emphasis on the importance of clear, specific, well-motivated assignments implies that a large part of the teacher's time will be spent on preparing adequate material and method of assigning lessons. In supervised study, to repeat, this is of first importance.

The question is often asked, how much time should be spent on the assignment? The answer ought to be obvious. There can be no fixed time limit. It depends on the subject, on the nature of the subtopic, on the readiness of the class for the new work. The following merely suggestive division

of time can be modified to suit local conditions. The important thing is to give ample time for clear statement and illuminating explanations.

TABLE XIII. — DIVISION OF RECITATION PERIODS

WHOLE LENGTH OF PERIOD	RECITATION OF PRECEDING DAY'S WORK	ASSIGNMENT	SUPERVISED STUDY OF ASSIGNMENT
50 minutes	5-10 minutes	15-20 minutes	20-25 minutes
40 minutes	5 minutes	15 minutes	20 minutes
30 minutes	5 minutes	12 minutes	13 minutes

As a general principle the daily recitation should occupy one fifth of the time, the assignment two fifths, and supervised study two fifths. Most of the time should be spent on supervising the pupils at work. But, as already stated, there can be no arbitrary time limits. Conditions must determine the needful distribution of time.

(a) *Dr. Merriam on the Assignment.* A very different plan of treatment is advocated by Dr. Merriam. Instead of preceding, the assignment follows the study period, grows out of the problems raised in this portion of the hour's work. In the "Directions" already quoted, the following suggestions direct the teacher's attention to the importance of specific assignments:

NATURE OF ASSIGNMENT

1. The assignment normally grows out of the class study and, therefore, should be given at the close of the class hour. Not infrequently the students may well infer the assignment from the study done in class, and thus no assignment, in a formal way, may be made.

2. If assignment is made, it should be very specific. It may be specific and yet allow the student large opportunity for individual variation. Only in case the assignment is specific can the student be held responsible for executing it. The importance of this is seen in the next article (3).

3. Teachers should impress their students with the idea that the effectiveness of the class hour depends much upon the equipment of the members of the class at any class exercise. (Compare note of importance below.)

4. Most assignments should be remembered by the students. Page references and the like may be written. But in such case, the teacher must dictate with care and the student must write with care. Good written form is essential.

5. Teachers should consult students, supervisors, and principal frequently as to the amount of time and effort required by assignments.

Note of Importance. Such formal assignments are not normal. The teacher is warned against the notion that such outside study is properly a preparation for class recitations. This places study subordinate to recitation. However, until schoolroom problems are more closely allied to the normal problems of contemporary life — as experienced by the students — the assignment discussed above may be used as a compromise.

(3) *Supervising the Pupils at Work.* The teacher is now ready to undertake the detailed supervision of the pupils engaged in studying the assignment explained during the first part of the period. In order to accomplish this effectively it is necessary to break the class up into at least three groups which conveniently may be called the superior, the average, the inferior. In the first group belong the boys and girls who do not seem to need any individual attention. They grasp the explanation of the assignment. They understand the model problem. Not only are they able to adapt

the explanation to new situations quite readily, but they work rapidly, and, therefore, can outstrip the rest of the class. For these reasons it is not necessary for the teacher to devote much time to this group. At present most of the teacher's time is spent on the bright pupils; for they are more easily taught, working with them is less taxing, they "advertise" the teacher's ability better, and in some schools are "fattened" for exhibition purposes. In supervised study, however, they are given extra work, a different kind of work. They are permitted to advance as rapidly as they can regardless of the class and, if eventually their standing permits, admission into another subject is their due.

Most of the supervision will be confined to the second and third groups. The second group differs from the first in lacking readiness of understanding. It needs help along the way. Perhaps some pupils can be developed to such an extent that it will be advisable to promote them into the first group. Whenever possible this should be done.

If the class is grouped on some scheme like the foregoing, it will be found that the third group will require most of the supervision. If the teacher is at all successful, this third group will not be large at any time. Most of the class will proceed with little or no help — the small third group will demand considerable attention for a time.

By the foregoing arrangement there will be ample time for considerable study supervision every period. The class is not retarded by the slower members; for, by individual or group assignments of greater extent but all bearing on the same unit of recitation, the class can move forward at the respective group rates. For example, in mathematics group one may undertake a large number of originals or be excused

from the second half of the period in order to study other phases of the subject in the library.

Limiting the discussion, then, to the supervision of the most needy group the teacher's method will be somewhat as follows. The pupils have begun to work. The getting ready process must be prompt and precise with a minimum of noise. No questions are permitted audibly, but by raising the hand the pupil indicates a desire to consult the teacher, who passes quietly to the pupil's desk. The pupil and teacher in whispers confer on the difficulty. When not so occupied, the teacher moves quietly up and down the aisles stopping at each desk to inspect each pupil's work. When she finds a pupil employing a wrong method, she stops and in low tones asks why he used this method. She always requires the pupil to give a reason for what he does. The pupil is expected to make his own corrections with a minimum of suggestion from the teacher. When absolutely necessary to do so, she will give the required information. There is nothing gained under such circumstances by sending the pupil on a long hunt for the facts. Valuable time is saved by telling him what he probably could not have discovered for himself.

The tour of inspection for the third group completed, the rest of the time is devoted to group two and, if any time remains, a rapid glance over the work of the first group finishes the main work of the study period.

During the inspection the teacher may employ a little "daybook" similar to that of the study coach already described. The study period will afford abundant opportunity for marking the pupils. These "study-marks" can be supplemented by the records during recitations and on examinations. A sample page of a book for such record is here given :

arations. But if he has been correctly instructed in how to study during the divided period, it may be safely assumed that he will be able to study with profit when alone.

The effectiveness of the work may be increased by designating the best pupil of the class (in each subject) as assistant to the teacher. This pupil would then have partial charge of the second group. The old monitorial system of Lancaster and Bell is here given a more specific application. The assistant should receive additional credit for this work.

The Daily Schedule of the Junior-Senior High School of Rochester, New York, given on the next page, indicates very well the practical arrangement of the class periods organized on the divided period basis.¹

3. **Weekly Supervised Study.** This plan sets aside one hour every week for supervised study in each subject by the teacher of the respective subjects. The plan was started by F. M. Giles, principal of the high school at DeKalb, Ill. He writes of the plan as follows:

Our plan, briefly, was this: We took five minutes from each of the six recitation periods, which we have in our school days, and put these together to make a thirty-minute study period coming once a day. In order that each class might receive the benefit of this period, we arranged that the first period class use the time on Tuesday; the second period class on Wednesday, and the third period class on Friday. The following week that the fourth, fifth, and sixth period classes use the period for supervised study. On Monday and Thursday the teacher uses this study period by having come to her room for individual attention such students as she thinks may need individual help. So much for the plan.

In regard to the results we have found that the plan is of greatest advantage with the younger students and in the first part of a

¹ *The Elementary School Journal*, March, 1916, p. 329.

SECTION OF MORNING PROGRAM OF ROCHESTER JUNIOR-SENIOR HIGH SCHOOL AND COLLEGE

H. A. JOHNSON, Superintendent

EDWARD H. SHUEY, Principal

Dept.	Principal and Ec.	Ast. Princ. and Ger.	College Lang.	College Hist.-Eng.	College Sc. and Math.	Nat. Sc. Col. Bot.	Latin	English	Eng. and Latin	English	English	German English
Room Time	Office	11	25	Board Room	5	6	21	22	17	16	18	Teachers' Office
8:30												Eng. I 7
9:05	Office	Ger. II 10-12		College Rhetoric T Th S	College Math. I-II M T W Th F	College Botany M T W Th F S	Latin I 9	Eng. V 12	Latin III 11	Assembly	Eng. II 8	Superv. Study
9:05		Superv. Study					Superv. Study	Superv. Study	Superv. Study		Superv. Study	Superv. Study
9:30												
9:33	Ec. and Salesman. 11-12					Scien. III 11	Latin IV 12	Eng. III 9	Eng. V 11	Eng. II 8	Eng. III 9	Consult.
10:05		Assembly	College Ger. V M W F		College Chem. (Lab.) M W F	Superv. Study	Superv. Study	Superv. Study	Superv. Study	Superv. Study	Superv. Study	
10:05	Superv. Study		College Latin V T Th S									
10:30												
10:33		Ger. III 9-10				Scien. II 10	Latin I 9	Vocation. Guidance and School Paper	Eng. V 11	Eng. IV 10	Eng. II 8	Eng. I 7
11:05	Superv.				College Chem. Lab. M W F		Superv. Study		Superv. Study	Superv. Study	Superv. Study	Superv. Study
11:05		Superv. Study			Rec. T Th							
11:30												

FIGURE X

subject. That is, the younger students need direction in method of study, and all the students find it helpful when learning the method of attack upon a new subject.

We find it necessary, of course, to keep some definite check upon the work of the students. This is done by setting for them certain concrete problems in their study. For instance, to work a certain number of examples; to be ready to prove a given theorem; to pick out the topic sentences in a given paragraph; to determine the most important points of a certain topic in physics; to pick out the leading events in a given historical topic, etc. We find the method works very well in mathematics, science, and history. Some difficulty has been experienced in the study of an English classic, such as "Macbeth," in making the work of the study period definite. We are working at this problem.

Besides teaching methods of study we have found one decided advantage of this study period is that by reason of it the teacher gets a considerable insight into the methods of study of the various students and can discover those who waste time, who have faulty methods of attack, etc.

In answer to your question as to how the student works when away from the supervisor, I would say that in the general opinion of our teachers the study at such times is intermittent and the student is dilatory in getting to work. We find this particularly true of the weaker students who often spend a good portion of the study period in getting paper and pencils ready, and finding out what they are to do, etc.

Study at home is, in most cases, carried on under adverse conditions. In many cases the student has to do his work in the living-room where there is general conversation to which he gives more or less attention. Many students have no definite time for study, but allow the study time to be interfered with by various household affairs that come up. Very often two or three students get together for study, and the weaker students depend too much upon the help of the others.

The technic of this plan does not differ essentially from that of the divided period save in respect to amount of time devoted to supervised study. The whole period is devoted to this supervision. As explained by Mr. Giles, the teacher spends the period in teaching methods of working. The writer visited several of the classes in this school and observed especially the English class at work. "Silas Marner" was being analyzed by the pupils, many of them at the blackboard making outlines, arranging lists of characters according to importance, stating details of theme, plot, development, etc. There was no reciting in the usual sense. The pupils were simply working together with the teacher, very informally.

In connection with this weekly work, Mr. Giles and his teachers have undertaken careful investigations of how pupils study. References to these investigations are made in the chapter on "Methods of Study."

4. Daily-extra Period. Mr. L. I. Loveland, principal of the high school at Pottstown, Pa., six years ago devised a plan that he claims is far superior both to the divided and the double periods. His argument is that study cannot be carried on in the same atmosphere as the regular recitation work. There should be, says Mr. Loveland, a definite period set aside for teaching pupils how to study. By having this period wholly independent of the recitation hour there will be provided a proper setting for study. To meet this need the study period is arranged for at the end of the day.

Two main reasons for introducing this type of supervised study are stated. It "tests the efficiency of the assignment before the pupils have gone home. If this assignment has met the purpose intended, the teacher can rest well, as the pupil can finish any work that is not complicated in the study

period without any further help. If there must be some home study, it is properly prepared for."

It will be noticed that here the pupil presumably has had time during a vacant period "to test the efficiency of the assignment" for himself. If he has had time to do this with all of the assignments, there is plainly an advantage in the plan, although its only advantage over the divided period seems to lie in the greater amount of time available for supervised study. In the divided period the study atmosphere is equally intense. Thus the test of the assignment is immediate. The following second reason is more important:

"Another and far more important feature of the plan used here is that we dismiss the pupils who made an average of 90 per cent when the study period begins. Are we not right in assuming that those who make good records have solved for themselves the problem of proper study? In questioning a very enthusiastic teacher who is in a school where the combination method is employed, I found, not unexpectedly, that he was giving the major, and by far the major, portion of the time devoted to study to the weaker pupils. 'This is inevitably so,' he remarked. Now why should we interfere with those who are solving the problem probably far better for themselves than we could do for them? Self-activity is far more valuable to a pupil than any direction we can give. By this plan we attend to the cases which need a physician and do not hamper or weaken the well by unnecessary interference with their own activities. If a pupil can do for himself all that is required, he should be rewarded for his ability, and by shortening his day in the schoolroom that much we are recognizing his ability and devotion to his work — something we are prone to neglect.

"In all the time we have been using this early dismissal plan for the pupils who are doing the work in a superior way, I have yet to hear a word of complaint on the part of the parents of these pupils.

We can all very vividly hear the storm of protest which comes from the parents of pupils who are not doing the work when, even for a day, the school routine is interrupted. Pupils who do well in school do not as a rule offer any serious trouble to their parents and there is no objection at all about having them at home early. They organize their time properly and no parent will find fault.”¹

It will be seen that Mr. Loveland's argument has been utilized in connection with the grouping of the class as illustrated in the discussion on divided period. Unquestionably superior pupils should be given certain privileges. The privileges themselves may act as incentives to better work on the part of weak pupils. The chief objection to Mr. Loveland's plan lies in *delaying* the supervision. A minimum amount of “quiz” during the recitation period with bi-weekly tests or reviews would enable the teacher to emphasize study during the regular period. If the period were lengthened to a full sixty minutes, there would probably be ample time for supervision. Mr. Loveland's aim is, however, as stated in a personal letter to the writer, to stimulate wholesome self-activity. For this reason absolute freedom is given to only certain pupils. Others should be subjected to a more rigid form of treatment, being required to attend study periods and to concentrate on school work during a school day two hours longer than usual. Supervised study, therefore, is organized only for those who have shown themselves in greatest need of it. Two results of this type of supervised study are cited in another chapter.

5. **Alternate Daily Periods.** By this plan every other day is devoted to supervised study by the teachers of the respective subjects. In Norfolk, Va., this has been found very

¹ *School Review*, September, 1915.

effective. It is a workable plan in any school, can be easily introduced, and, when adequately prepared for, saves time.

6. Plans in Richmond, Va. Superintendent E. E. Smith has evolved an ingenious scheme of study supervision which is an elaboration of the divided and extra periods. The organization of the system is described in full in the Appendix. Similar plans are in operation in the Binford and Bellevue Junior High schools of Richmond, Va., but the pupils in the last named are assigned "home rooms" where they study under supervision. Two periods a day the pupils elect the teacher from whom they prefer supervision (all must elect some teacher), but the third period (after regular school hours) is compulsory for those who are deficient in some subject. Superintendents Chandler and Hill are convinced that the plan is successful.

7. Occasional Supervision. Many schools give opportunities for supervised study to weak or retarded pupils. Such assistance is deemed important only when needs are great. The objection elsewhere stated — namely, that prevention is better than cure — applies here. Supervised study is just as much a part of the program of studies as any course. How to study is something to be taught before and while the pupil works. It should not be delayed until the pupil has been crippled. Teach him how to walk, how to avoid danger, how to be cautious, thoughtful, rational. This type of school instruction reduces retardation.

GENERAL SUMMARY

The foregoing discussions of general and subject schemes of supervised study have aimed to reflect not theoretical plans, but plans in actual operation. School people are facing the

need of reformed instruction. The exact and best way of meeting new demands must be determined by conditions in each school. In the preceding pages the divided period has received special attention because it seems to be the most easily adjustable and the most logical of all the methods. It implies what many teachers at present hesitate to indorse, a shorter "quiz" or recitation period. It is feared that doing away with reciting will foster neglect and slipshod work. On the other hand, if the pupil realizes that he is being marked on what he does while studying as well as on how he recites, this objection is overcome.

It should be said in conclusion that any scheme which definitely and systematically teaches pupils the mechanics of doing the next day's work must shortly become an integral part of every school in the United States. The best method perhaps has not yet been devised. Experiments are going on; they must be multiplied. Discussions in periodical and book form should increase,—all these efforts aiming to quicken attention and excite active constructive interest in a new type of teaching and a new form of class management.

CHAPTER VII

METHODS OF STUDYING

IN the preceding chapters there have been discussed some of the fundamental phases of the organization of supervised study. It is now necessary to consider the contents of supervised study; *i.e.* the subject matter, what is taught as factors in this plan of instruction. For supervised study is not merely a method; it is also a subject with certain topics that need elaboration, distinct from the courses of the curriculum. In other words, the supervised study period in every subject must deal with the mechanics of learning. There are right ways of working and there are wrong methods. In the high school it is just as important to teach the pupil correct methods of work as it is to teach him the fundamentals in each course. It is also important for teachers to know something of the methods of study employed by their pupils. Such information would furnish an excellent background for instruction in study methods. Before considering in any detail the various topics that should be stressed in a course on how to study, it will be interesting to consider a few of the investigations bearing on the high school pupils' methods of work.

I. INVESTIGATIONS OF THE STUDY OF HIGH SCHOOL PUPILS

A. Time of Day preferred for Studying. In 1899 N. C. Johnson, in a Questionnaire on Methods of Study of High

School Pupils,¹ gleaned the following information, stated in tabular form :

TABLE XIV. — TIME OF DAY PREFERRED FOR STUDY

		1	2	3	4	TOTAL
Early		43	7	15	19	84
7-8 A.M.		13	3	8	1	25
8-9		4	1	4	5	14
9-10		48	17	22	3	90
10-11		24	6	7	2	39
11-12		17	3	2	—	22
2-3 P.M.		5	2	—	4	11
3-4		4	2	—	2	8
7-8		11	—	1	2	14
8-9		4	—	3	2	9
9-10		1	1	1	4	7
10-11		—	—	—	2	2

The numerals on the top line refer to the high school years. By an oversight the second year (sophomores) in one high school was omitted, which accounts for the small number under this head. The table shows that the hour before breakfast and the first hour in school, from 9 to 10 A.M., are preferred. 274 pupils prefer the forenoon as against 51 preferring the afternoon or evening. Very few choose the late hours.

Different results, however, were obtained by F. M. Giles in a similar investigation confined to his own school.

¹ Op. cit., pp. 257-277.

TABLE XV. — TIME OF DAY PREFERRED FOR STUDY (GILES)

	FOURTH YEAR	THIRD YEAR	SECOND YEAR	FIRST YEAR	
Morning	1	6	2	6	15
Afternoon	0	2	3	8	13
Evening	23	57	55	56	191

Table XV, based on replies from 26 fourth-year, 68 third-year, 85 second-year, and 79 first-year pupils,¹ shows that 75 per cent of all the pupils use the evening for studying.

There may be some significance in the choice of the words "prefer" and "use" as employed by these principals. Perhaps the pupils in DeKalb did not *prefer* the evening hours, but for one reason or another were rather forced to study at that time. Under prevailing conditions it may be generally true (extensive investigations are wanting) that high school pupils do not find much opportunity for study before school opens in the morning. Under a modified system of home study it is conceivable that an hour or less at home would prove sufficient preparation of the next day's lesson.

B. Studying Alone. Johnson found that 272 pupils preferred to study alone, and Giles that 235, 91 per cent, did not like to study with any one else. The following parallel outline shows the results:

TABLE XVI. — PREFERENCE IN STUDYING ALONE

	FOURTH YEAR	THIRD YEAR	SECOND YEAR	FIRST YEAR	
Johnson	48	60	37	127	272
Giles	25	64	78	68	235

¹ *School Review*, 1912.

C. **Amount of Time spent in Studying.** Various studies have been made in this field. Giles gives the following tables for his school. It will be noted that the second-year pupils study less than the others. Giles reminds us of the fact that this is the year of greatest elimination, and hints that there might be a connection between these two facts.

In a recent study Dr. W. H. Heck¹ reports from his investigation of thirteen high schools in Virginia that the pupils in these schools average one hour and twenty-two minutes a day in study at school, one hour and fifty-seven minutes a day in study at home, and three hours and nineteen minutes a day in study at school and at home.

The author, in a similar investigation in Illinois in 1914 of 3252 pupils, found results quite similar. About 25 per cent of the pupils in seven high schools spent one half to a whole hour a day at home studying; about 35 per cent from one to two hours; 15 per cent from two to three and a half hours. The largest per cent lies in the one to two hour group, thus being in general agreement with Heck's results. Giles, in his study, found that about 33 per cent of his pupils studied thirty minutes or less at a time; about 40 per cent devoted one hour to study at a time; and about 23 per cent spent longer than an hour at a time studying.

The foregoing investigations, hardly numerous enough for any final conclusions, indicate at least the trend of study habits among high school pupils. In the program of supervised study, however, the amount of time spent is less important than where the student does his studying. The former must vary and is significant only in the way the time is actually used; but the living-room, for example, suggests

¹*School Review*, Vol. XXIII, No. 9, November, 1915, pp. 577-606.

TABLE XVII.—AMOUNT OF TIME SPENT IN STUDYING

FOURTH YEAR			THIRD YEAR		
Subject	No.	Average	Subject	No.	Average
English	23	37.1 m.	English	64	40.4 m.
Chemistry . . .	19	51.0	German	48	39.5
History	18	46.6	History	51	40.7
Domestic science .	5	25.0	Physics	25	44.2
German	15	43.6	Com. geography .	3	26.6
Agriculture . . .	3	30.0	Chemistry . . .	11	47.7
Review math. . .	1	45.0	Agriculture . . .	5	40.0
Economics . . .	5	33.0	Geometry	7	36.4
Physics	1	45.0	Cooking	7	27.1
Business English .	1	30.0	Latin	11	39.0
			Economics . . .	7	41.4
			Stenography . .	1	35.0
General average		38.6 m.	General average		38.2 m.

SECOND YEAR			FIRST YEAR		
Subject	No.	Average	Subject	No.	Average
German	55	39.1 m.	Arithmetic . . .	19	37.8 m.
Geometry	43	51.7	Algebra	57	39.7
History	55	50.5	English	64	36.6
English	7	40.9	Latin	29	43.6
Sewing	2	37.0	Physiology . . .	36	48.4
Agriculture . . .	13	43.4	Science	10	27.0
Algebra	10	32.0	Bookkeeping . .	6	47.5
Latin	39	44.6	Cooking	5	43.0
Com. geography .	11	36.3	Sewing	2	37.0
Arithmetic . . .	11	30.0			
Business English .	13	38.0			
Physics	2	37.0			
Stenography . .	4	37.5			
Cooking	6	25.8			
General Average		31.7 m.	General Average		40.0 m.

innumerable distractions, poor light, bad posture — in a word, conditions hardly adequate for the finest expression of intellectual ability.

II. METHODS OF WORK

The teacher who aims to teach pupils the meaning and the methods of studying will need to deal with the following topics: The Use of the Textbook, Underscoring, Summarizing, Outlining, Notebooks, Reports and Supplementary Reading; Reference Books, including Dictionaries and Encyclopedias and Magazines. These are the main wheels and shafts of the mechanics of studying. They will now be treated in detail.

1. **The Use of the Textbook.** The attitude that regards a book simply as an ornament, a form of craftsman's art, has no place in the study room of the high school pupil. To him a book must be a tool whose peculiarities and possibilities are known and constantly developed. Doubtless there is too much textbook work in the average school, but however methods of teaching may change, there will always be room for a good text — in fact, it is difficult to see how teaching could achieve results without some ready summary of subject matter. This does not mean that the text ought to be the chief source of information. But because it is likely to remain one of the necessary means of education, it is important that the pupil understand how to use his book while studying.

a. Underscoring. Underscoring is a means of hitching or anchoring what the pupil has found to be the important sentence or topic in a paragraph. In some texts this sentence is printed in italics, but in many others the pupil himself must ascertain the topic sentence, the leading thought of the paragraph. By drawing a horizontal line beneath the sentence the pupil sees the main point "relieved." It stands out from the

rest of the words and on rereading is easily apprehended. Sometimes the topic sentence is not so compact. It contains many relatively unimportant modifiers which can well be omitted in selecting the controlling sentence. For this reason it becomes necessary to make a Z type of underscoring, the leading words of the chief thought being combined by a continuous line that follows a zigzag path.

Although the textbook is to be treated as a tool, this must not mean careless and ugly underscoring. If in the manual training department it is important to keep the tools sharp and clean so as to achieve a fine cabinet or a perfect chair, it is no less imperative that pupils take care of their study tools in other subjects. Neatness should characterize the pupil's work in all branches of his studying. Neatness, orderliness, clearness, are closely related to good studying. This does not imply that one's writing must be perfect or labored, for this to many of us would be a fearful loss of time. What is meant is that underscoring should be done neatly, not with large ugly black lines that follow the course of a mountain path.

It probably is better not to use ink for underscoring. It often spreads, and easily blots. The main objection to the use of ink is, however, that it makes revision rather difficult.

In schools where textbooks are free, the question arises whether the pupils should be allowed to deface the books by underscoring. If the lines are drawn lightly, yet plainly and with discrimination as to their number, they could be erased by the pupil at the end of the term, and thus leave the book in good condition for the next pupil.

(1) *Notice Signs.* Some people prefer to employ a variety of signs, such as parentheses (), parallel lines ||, braces { }, crosses $\times$ $\times$, or checks $\surd$ $\surd$, at the beginning and end of a sen-

tence or passage that is important. This method is less defacing than long lines, but in the high school it fails to set forth for the young pupil the master thought as boldly as is possible by means of the long line. One finds persons who prefer to make an *N.B.* in the margin or an *OBS*, calling attention to something important in the paragraph. The chief objection to this method for high school pupils is that it fails to make definite what is important. At the moment the important point is perfectly clear, but with the passing of time this important point has become vague, the sign points to a confused something only. In many books it is customary to introduce in the text numerals as (2:15), calling attention to a list of references at the end of the chapter. In high school the pupil can employ this method for cross references, allowing each numeral to indicate a topic and after it the page on which this topic is again discussed. This is almost indispensable for economical work when working on a problem assignment. It is customary in Bible Training Schools to employ such methods as the foregoing for ready reference purposes. Bible students often make use of similar devices.

Underscoring, whether by lines or by signs, cannot be done successfully without considerable drill. Part of the period at the beginning of the term, with frequent additional periods, should be spent on this phase of study. It is just as important as the subject contents of the course. Pupils can be graded or marked on this kind of work just as well as they are marked on the problems they are assigned to solve.

b. Summarizing. This differs from the preceding method in several particulars. The summary or gist of the lesson is stated in the pupil's own words. It should be a condensed brief or review of a paragraph or whole lesson. This implies

that the pupil has already discriminated between the important and the incidental features of the paragraph. A summary that simply repeats with a few verbal changes the contents of the next lesson is not a summary — it is virtually a copy. Summarizing is difficult work. In its highest form it becomes a rare literary art as well as a beautiful evidence of clear thinking. The man who can seize upon the essentials of a situation, a case, a book, and report these briefly and at the same time clearly is valuable to society. He is likely to be an excellent book reviewer, an alert and prompt journalist. One finds in the high school, however, that this ability lies undeveloped. The pupils are expected to do this kind of work, but seldom does the teacher take time to drill upon it. It forms a unit of recitation in some English courses, and when taught there it is tacitly assumed that the summarizing power will spread over into all the subjects. This, however, is a false assumption. In every subject with the exception of those that do not call for such methods, the pupils should be trained to summarize the contents of the next lesson.

(1) *Means of Training Pupils to Summarize.* A helpful means of acquiring this needful skill is to require the pupils to write the summary on a sheet of paper of a certain size and to confine the material to this one sheet. Or the summary must be given orally in a certain time limit. Another method is suggested under the topic, "Inserted Leaves," page 171. A significant variation from the usual type of examination would be to require the pupils to summarize a page in their textbook or in some new material, giving them a certain amount of time for reading the contents and a time limit for the summary. Still other assignments in this type of work are writing book reviews of the text used in class or other

material; summaries of bibliographies or references assigned by the teacher or found by the pupils themselves; prefaces to some long report being prepared as a group assignment or a preface to some imaginary book; introductions which contain reviews of the course as outlined by the teacher or statements relative to the meaning of some large unit of recitation under discussion. A still more valuable method is to require the pupils to write a summary of the chapter being studied and later a summary of the whole book or of the whole course.

c. The Uses of the Margin. Margins are generally included in printed material for æsthetic reasons as well as for the necessities of the printing press. Pupils in school not infrequently find the margin an opportunity to develop latent talent of caricaturing. Frequently the margin is filled with idle jottings, ugly forms, and meaningless scribbling, witnessing to the vagaries of a wandering attention. It has finer possibilities, however. Instead of serving as a frame of the printed page forbidding with an adolescent's wit or idleness, it should serve as a depository of:

First, the summary of each paragraph. If the pupil is trained to write along the side of each paragraph a brief summary of its main thought, he will save much time in his studying.

Second, references to related material in the same book or elsewhere.

Third, questions on the lesson, questions that arise during the reading of the lesson and that must be jotted down at once lest they vanish.

Fourth, criticisms of the lesson, points of view different from the author's, the pupil's fresh reaction to the subject matter.

Fifth, new thoughts, suggestions, large questions that are destined, perhaps, to stimulate the young man or young woman into serious plans of great living.

The possibilities of the margin are immeasurable.¹ Here the pupil or the reader is invited to deal intimately with the author through his book. Nothing is more attractive to the real student than a book well thumbed and scented with the presence of fine thinking on its contents. Books so often lie cold and ignored even though read and commented on. They lack the touch of the individual reader. Written for many, they, however, depend upon the individual's opinion and criticism for favor and influence. This should be true in the high school, where life's finer things are taught, and where habits of living and working should find a large place in the activities of the school day.

What is true of the margin is equally true of *the flyleaves*. They offer large opportunities for personal comment of the best kind. Here, again, is a basis of class standing. Marking pupils on their reaction to the books used in class is of no less importance than knowing a few dates and the details of *Ivanhoe* or *Lady of the Lake*.

d. Inserted Leaves. For the sake of compactness and also economy of time it is helpful to paste blank pages in the book at the close of a chapter or here and there within the chapter. On these pages can be written outlines, summaries, references, etc. The advantage of this method is that at the end of the term these extra pages can be removed without any harm to the book. They should be of thin paper so that the bulk of the book will not break the back. A thin, narrow strip of paste on the left edge is sufficient. This edge should be inserted close to the binding of the book.

D. Pupils' Comments on their Methods of Studying. Before taking up another section of this subject it will be inter-

¹ Howard Griggs, *The Use of the Margin*.

esting to note what Rickard and Giles gleaned concerning some of the foregoing methods of work. In answer to his question, Do you underscore the most important point in the text? Giles obtained the following results:

TABLE XVIII.—THE FREQUENCY OF UNDERSCORING

	FOURTH YEAR	THIRD YEAR	SECOND YEAR	FIRST YEAR	TOTALS
YES	21	63	58	50	192
NO	4	6	27	23	60

Rickard, however, in reply to a similar question received less favorable replies. His results are shown in the general table on page 193.

It is altogether likely that many high school pupils all over the country use the methods described. Whether they do so intelligently and with considerable skill based on careful instruction, is quite another question. The point here as elsewhere in this book is simply this, that these methods should be taught just as much as are history or English or science.

2. **The Use of Reference Books, including Dictionaries and Encyclopedias and Magazines.** Almost every teacher who reads this book will agree that few high school pupils (not to mention pupils on other levels) know how to use a dictionary. One needs only refer to the beginner's study of a foreign language and the confusion of selecting proper meanings to fit a hazy translation to understand the bewilderment of many young people using the dictionary of their mother tongue — English. This is not necessarily a criticism of the dictionary. Language is bound to be complex, and there must be a wealth

of definitions. In the front of many dictionaries are directions, but few people consult them. Even if they should do so, the directions themselves often need interpretation.

Dictionaries are arranged in alphabetical order not simply in regard to the initial letter of each word but the second and third letters, etc., are arranged in a similar order. This fact is frequently overlooked by the young pupil. During the prolonged assignment and supervised study period the handling of the dictionary would be an excellent drill lesson in study.

Encyclopedias are elaborate dictionaries on the one hand and compendiums of knowledge on the other. The best of them are written by high authorities, and endless care is taken to make them accurate and at the same time brief. Considering their importance, it is surprising to find that few young people are taught to use them.¹ Young students find it difficult to select exactly what is pertinent to the problem. They discover something that bears a similar title and then proceed to copy long sections of what often proves to be irrelevant material. This means loss of time and effort. It is due in the main to a lack of background, a broad or general knowledge of the subject. For this reason assignments that involve the use of reference books must be carefully planned and their preparations supervised. One needs only examine the work of university students in this particular to note how helpless many of them are when assigned readings and reports in reference or outside reading. The following report by Miss Caroline S. Lutz of the Academy of the James Millikin University is included as an excellent illustration of what should be done in every high school possessing its own or patronizing the public library.

¹ See G. Lomer and Ashmun, *The Study and Practice of Writing English*.

THE ROUND TABLE

A LIBRARY TOUR

We needed to do so much library reference work in our academy that we arranged with our city librarian for a systematic tour of the city library for ten students. The tour was planned in three stages: (1) the librarian was to reveal the way a book finds its place in the library family; (2) the cataloguer was to explain how these books are classified, cards filed in the catalogue, and positions on the shelf given; (3) the reference librarian was to conduct the party to each section of the library and locate each class of periodical and book.

The ten best students from the third and fourth year classes were selected to make the tour, because they would be more enthusiastic and more accurate in presenting the material to the students who were not present. They had their little pads and pencils ready when we were invited into the private office of the librarian. She gave us each an accession card. Then she told us the story of "Book X": how an accession card was made out for it, not because one of the librarians had learned about it in the A. L. A. booklet or from a book review in a periodical, but because a friend had desired the book; how this card had been filed in the drawer, "Books Wanted"; how one day it had come out to be placed on the list to go before the library board; how the library board did not think the book too expensive, although it was a very fine book; how the accession card for "Book X" then found itself in the drawer "Outstanding Orders"; how the book was received, checked up, and entered in the accession book; how the cataloguer then took it to give it a call number, to make out and file its cards in the catalogue, and to send it out to the shelves, labeled.

What had happened to this book had happened to forty thousand other books, and in the cataloguer's room we learned how these thousands of books can each have a different call number. Slips with the following information were given us:

DEWEY DECIMAL CLASSIFICATION

Classes

000 — General Works	500 — Natural Science
100 — Philosophy	600 — Useful Arts
200 — Religion	700 — Fine Arts
300 — Sociology	800 — Literature
400 — Philology	900 — History (Biography and Travel)

Each class is divided into ten divisions, each division into ten sections, the sections into subsections, etc.

Besides a class number every book has an author number. The combination of these two numbers forms the call number of a particular book, and is the number in the upper left-hand corner of the catalogue card and on the back of the book. It is the key to the location of a book on the shelves.

PREFIXES TO CLASS NUMBERS

- R — Reference room
- B — Bound periodicals (lower stack)
- *R — Reference (Lib. or Cat. R.)
- P — Public documents
- J — Children's books
- + — Oversized books
- F — French; G — German, etc.
- BL — Books for the blind.

With these data before us, the cataloguer explained the Dewey Decimal System and the Cutter Table. Then she turned to the many books which she had arranged on the shelves of her office for the occasion. There were ten books to illustrate the call numbers of ten general classes of books. There were other books to illustrate the exceptions to the rule, such as the big "S" in the call number of the short-story group. There were still other books to

illustrate the special symbols used, such as the red "J" for books in the children's room. There were more books to give us the key to the order of precedence on the shelves, with special reference to the complicated decimal. After we had looked at these books and their labels, we listened to a little talk about the Dictionary Catalogue: how it differs from an index; how the system of classification under a specific subject is followed; how the catalogue answers about twenty different general questions, such as, "What is the real name of ——?" "Who wrote a biography of ——?" "Has a certain book a sequel?" "Who is joint author of a certain work?" "What bulletins does the library contain?" "By what means was a certain periodical first published?" and "With what year and volume does our file of a certain magazine begin?" how the cards are filed in the order of person, place, thing, and works before criticisms; how the abbreviations and the figures are considered as if spelled out; how the articles are disregarded; and how the subjects are written in red. Then we went to the catalogue itself. Each student was given a slip of paper with three library problems. The following are examples:

1. Have we a book by Jean Mace?
2. Who wrote the Riverside Art Series?
3. Locate the Sherlock Holmes stories.
1. How many different editions have we of Bunyan's *Pilgrim's Progress*?
2. Find order of stories in Wellworth College Series.
3. Locate Riis's *Ten Years' War*.

The first two required just the use of the catalogue. The last problem asked for the call numbers of certain books. These were used later.

The third part of our visit was in charge of the reference librarian. She called our attention to the fact that all books and periodicals in the library have a definite order of arrangement. First she showed us how the periodicals and newspapers in the reading room are arranged alphabetically; then how the books in the

reference room are arranged according to the Dewey Classification. A number of books such as the index to *Britannica*, *New International Encyclopædia*, *Brewer's Reader's Hand Book*, *Walsh's Curiosities of Popular Customs*, *Harper's Dictionary of Classical Literature*, *Hoyt's Cyclopædia of Practical Quotations*, *Who's Who*, and *Stateman's Year Book* were given special attention. *Poole's Index and Reader's Guide* were consulted before going to the lower stacks to see how the periodicals were arranged. We saw the different classes of books for circulation in place; we located books for the blind, oversized books, French and German books. We made use of the call numbers which we had written opposite question 3 on our slips. Ten delighted students located ten books, not easy to find, in quick time. Students who before had borrowed cards or begged to be excused from library work now felt at home and wanted cards.

Effective reference work depends, then, upon a clear conception of the problem, — upon what the "goal idea" is in this additional reading. Consequently, reference work must rest on a very *specific* assignment in the less advanced classes. Clearly, the type of reference work rightly expected of advanced university students should not have a place in the high school. But only too frequently high school teachers employ university types of assignments in the secondary schools, and the results cannot be other than discouraging. They are depressing enough in higher education. Before pupils are sent into libraries to look up additional material, there should be careful training in this type of work, training just as minute and organized as any of the traditional subject drills.

3. **Use of the Outline.** Ordinarily, outlines are used as preliminaries to a lengthy discussion or report. They set forth a scheme of treating a subject, giving a review of the points to be considered with the probable amount of emphasis

or space that properly belongs to each head. They serve the purpose of a map or a purpose similar to that of an architect's plans of a building. For a long discussion, such as a book or a magazine article, they are almost indispensable. They are less essential to a brief treatment. Some writers do not employ them at all. They have a clear conception of the field and of the form, and write rather under the excitement of a theme that seemingly develops itself logically or psychologically. But, although these writers or speakers do not use a written outline, they follow a plan that is the result of analysis based on careful thinking. Phillips Brooks, the renowned preacher, rarely used outlines of the ordinary kind. Instead, he constructed his sermons on the basis of so many paragraphs, each paragraph containing a new point, a higher rung in the ladder of his development of the theme. It was a ladder type of outline, not definitely sketched beforehand, but growing naturally out of the leading conception of his theme.

Outlines have also another function. They are not only pencil sketches or charcoal strokes of the painting to be made, they are also analyses; *i.e.*, in the studying of an assignment in the textbook the pupil must first of all grasp the author's meaning, not in a general way, but in detail. As far as possible he must reproduce the author's framework, ascertain the basal and incidental parts of the material. The pupil's outline, however, will necessarily differ from the author's. It must be his own outline of the author's discussion, and reflect his own understanding of the problem. To be sure, much of the outline will reproduce the author's arrangement of the material; but it is important that the pupil react with his own conception and interpretation of the lesson. In other words,

the outline of the next lesson should involve original thinking on the part of the pupil.

Viewed from this angle, outlines, as a factor in studying, are more than bare skeletons of the lesson. As employed in this chapter the term includes something finer and more difficult than mere listing of points haphazardly selected from each paragraph. The outline is a reconstruction of the author's material as the pupil sees it. It must be the pupil's own analysis. No two outlines in a class where studying is correctly performed will be exactly alike, although in general form they will of course have many similarities.

a. The Structure of Outlines. Outlines should follow certain set rules.¹

CONSTRUCTION OF HEADINGS

(a) They should represent main divisions, important aspects, or distinct steps in the treatment of the subject.

(b) They should as far as possible be consistently expressed in the form of nouns, noun phrases, or complete sentences.

(c) When related, they should be expressed in parallel form.

(d) They should be as brief as is compatible with clearness.

(e) They should be so worded as to make the most important element in the heading emphatic.

DETAILS OF ARRANGEMENT

(a) Headings of coördinate value should always be the same distance from the left-hand margin.

(b) Subordinate headings should always be indented under the heading to which they are subordinate; and subheadings which are of equal value should be indented the same distance.

(c) When headings or notes run over one line, the second line should begin either level with the first word of the preceding line or

¹ Lomer and Ashmun, *op. cit.*, pp. 198, 199.

else should be indented. It should never run out to the margin or begin level with the number or letter indicating the heading.

(d) Avoid the practice of too elaborate subordination. Do not put in the form of minute headings material not important to the outline. Too much detail is confusing and properly belongs in the text.

(e) The marks generally used to indicate headings and sub-headings are Roman (I, II, III, etc.) and Arabic numerals (1, 2, 3, etc.), capitals (A, B, C, etc.) and small letters (a, b, c, etc.), and occasionally the letters of the Greek alphabet (α , β , γ).

(f) Roman numerals are generally used to indicate large parts or sections of an outline; letters should not be used where there are a large number of headings of coördinate value or where numerical order is significant. The system of numeration indicated in A', A'', or A¹, A², I¹, I², I³, has the obvious disadvantages of being too confusing.

(g) Except in the case of a brief for an argument do not use the terms Introduction and Conclusions, unless they include material distinct from that in the rest of the outline.

(h) A tabulated list of matter arranged in columns should be clearly indented under its special heading. Any matter following the tabulation and included in the note should follow rules (a), (b), and (c) given above.

The authors of the foregoing suggest further that subheadings should be avoided when the material could readily be included in the main head or properly omitted. A single heading could hardly be justified, but as a counter suggestion it should be noted that corollaries to theorems in geometry are subheads and often are single.

b. The Forms of Outlines. The foregoing excellent rules can be illustrated under a variety of forms of outlines frequently met with in all kinds of school work.

(1) *The Vertical or Serial Outline.* This is the simplest of the forms, consisting of a number of items listed one below the other, all coördinate one with the other. Each topic sentence of a number of paragraphs would constitute an item in such an outline. The chief events of a reign, or a presidential administration, would be listed in such an outline form, if there were no subordinate points included. The itemized statements of merchant's bills are vertical outlines.

If the pupil writes in the margin the topic sentence opposite the proper paragraph, he will have at the end of his lesson a vertical outline complete. The review would then include principally this margin outline. Or the main points might be written on the inserted page. It is better to keep the outline together with the text by means of the margin or inserted pages. In the beginning, however, pupils should practice outlining on separate sheets.

(2) *The Oblique Outline.* This requires considerable ability to think, the power of discriminating between essentials and non-essentials, and also the ability to make the whole outline effective for review purposes. The form of the outline has already been referred to under the various rules or mechanics of headings, indentations, etc. Two are here given.

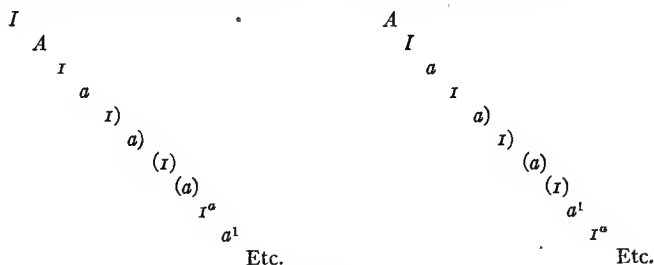


FIGURE XI

(3) *The Parallel Outline.* This is a double or multiple vertical outline. It is used mainly for purposes of comparison ; as, for example, in history, where contemporaneous reigns are compared, and also for laboratory reports. Illustrations of both kinds are given below :

A PARALLEL OUTLINE IN HISTORY

Table of the Thirteen Original States¹

COLONY	DATE	FIRST SETTLEMENT	MOTIVE	SETTLERS
Virginia	1607	Jamestown	Wealth	English adventurers
Massachusetts . .	1620	Plymouth	Religious freedom	English Separatists

FIGURE XII

A PARALLEL OUTLINE IN SCIENCE

Table for Guide in Study of Minerals²

NAME	HARD- NESS	COLOR	SPECIFIC GRAVITY	CRYSTAL FORM	CLEAV- AGE	FRAC- TURE	LUSTER	OTHER FEATURES
Quartz . .	7	Trans- parent	2.6	Hexag- onal	Name	Con- choidal	Vitre- ous	
Calcite . .								
Etc. . . .								

FIGURE XIII

(4) *The Brace or Horizontal Outline* is less familiar to the high school pupil and in general is less used than the others. It presents the material clearly and with more economy of space

¹ Dickson, *American History for Grammar Schools.*

² Tarr, *The New Physical Geography.*

than the oblique form. It is of special service in grammar work when the teacher desires to employ a diagram that varies from the usual type. Examples of this form follow :

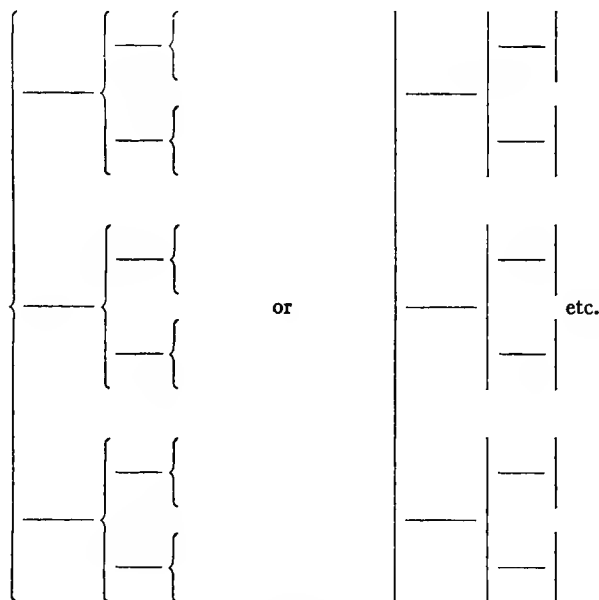


FIGURE XIV

(5) *The Interlacing Outline.* An illustration of this type is given in this chapter. It sometimes happens that illustrative material, such as tables or other forms of statistical results, must be broken up in order to make the reference especially suggestive or striking at the time. It becomes necessary, then, to scatter the results throughout the chapter as done here ; but, inasmuch as all of this material belongs to a particular large section of the chapter, it is given its own outline, which

dovetails into the general outline of the chapter. For example, the capital letters in this chapter belong to the overlapping outline.

4. **Notebooks.** There is need of a warning note at this point. Doubtless too much emphasis has been placed on notebook work, especially in English, where much time is spent in copying poems and a long variety of interpretations. When one considers the great amount of themes, copying material, or organization of lessons in notebooks, and the working of problems on paper common to the average school and the customary assignments, it would seem that the educative or learning process is as much manual as mental, with perhaps an overemphasis on the former.

Notebooks, as already indicated, are used for a variety of purposes. In science it is important that formulæ and experiments preferred by the pupil have a record permanent enough for reviews and examinations, if not for a longer period. In English it is customary to employ notebooks for many reasons, some of them legitimate and others questionable. (A more detailed discussion of the English problem may be found in Part II, Chapter IX.) Perhaps there is more need of notebook work in history than in any other subject excepting mathematics. The necessary correlations and reorganizations essential in the studying of history require careful recording in some form of notebooks.

In high school there is, as a rule, little need of notebooks for the purpose of taking lecture notes. It is extremely doubtful whether instruction by telling or by the frequent employment of exposition is effective in high school. A certain amount of explanation beyond that of the texts is, of course, essential. These references by the teacher might be recorded in note-

books, although it probably would be more helpful to write these explanatory notes on insert pages or in the margin. Many students fill the flyleaves and covers of their textbooks with various notations. It is an excellent practice to paste book reviews or criticisms of each book in one's personal copies.

a. Kinds of Notebooks. In looking over an ordinary class the teacher will find a confusing variety of notebooks, some large, others small; some opening at the end, others at the side; some loose-leaf, but most of them bound. Many notebooks are carelessly bound, and therefore easily bent and torn. A shabby-looking notebook is a mark of a careless pupil. *Tools should always be in good condition.*

(1) *The loose-leaf notebook* has many advantages over the bound. The cover is stiff, the pages can be rearranged for purposes of correlation or expansion. It lies open easily. For the sake of uniformity of tools — as in manual training or domestic science and laboratories, every pupil should have the same kind of notebook with pages of letter size ($8\frac{1}{2} \times 11$) and opening at the side. The initial expense of such a book is a little greater than for the kind ordinarily bought, but the same cover can be used in every course. The additional expense of paper is cheaper than buying a notebook for each subject. When the course has been completed, the pages containing its material can be bound with manila covers and strings (girls probably would prefer ribbons) or bound in more permanent form in the bindery of the high school.

(2) *Cards.* A modification of the loose-leaf notebook, and preferred by some students, is the card or stiff paper usually 4×6 . It is convenient for reference work or merely temporary notations. The following is a typical form:

CARD FOR REFERENCE WORK

COURSE	REFERENCE NOTES
	Author_____ Title of Book_____ Topic being studied
Page_____	

FIGURE XV

(3) *Manila Folders and Filing Cases.* A much better device consists of large manila folders in which are filed items pertaining to the subject named on the projection of the folder. These are filed in a wooden or steel cabinet according to alphabet. Clippings, magazine articles, jottings, references, etc., can be recorded in this way for ready service and be discarded if desired when the pupil has no further need of them. A convenient size is $11\frac{3}{4} \times 8\frac{3}{4}$, with an additional half-inch projection for the subject. This size is suitable for magazine articles and letter-size notepaper. The loose-leaf pages of the notebook can be filed in such folders without requiring covers or binding.

Filing cases can be made in the manual training department for each pupil. A large cabinet or series of cabinets with a drawer for each pupil should belong to the supervised study equipment of every room where the notebook work is done. Or a large room, like a locker room, could be set aside for these

cabinets, each pupil of the school possessing one with individual key. In this drawer could be filed, in a systematic way, all the extra material in every subject. The cabinet or series of cabinets should be made somewhat as follows :

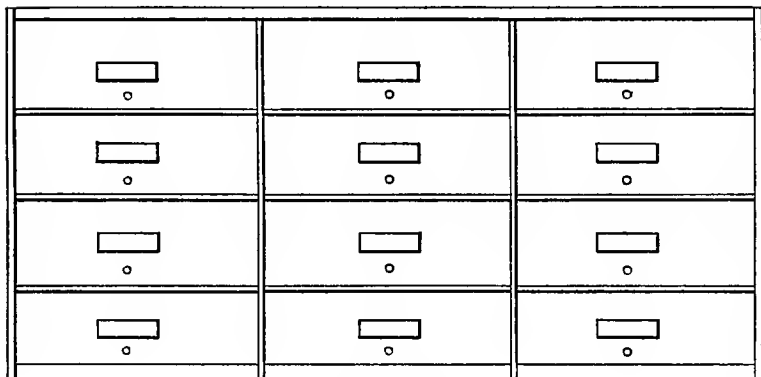


FIGURE XVI

On the front of each drawer appears the pupil's name, written on a card, inserted in a small frame for this purpose. At the end of the term the name can be changed, if necessary, and the contents of the drawer removed.

A side view of one drawer is given in the next drawing.

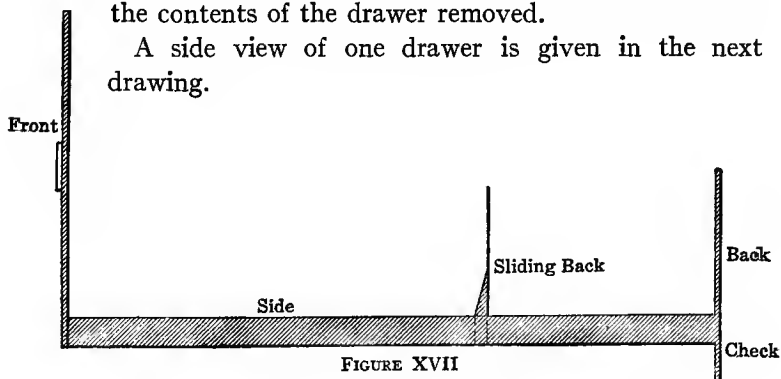


FIGURE XVII

The folders stand in the drawer. A sliding back or large block of wood should be used to support the folders if there are only a few of them. A check to keep the drawer from being pulled out all the way has been found serviceable.

Pupils in the manual training department can easily design and construct these filing cabinets, but in planning for new buildings it would be better to provide for them at the beginning and have them built in, as is customary with bookshelves.

Before closing this section on filing cases, it may not be improper to remind teachers that just as much care should be taken in systematizing the details of studying as is taken in caring for the pupil's wardrobe or gymnasium outfit. The pupil should be marked on his ability to do filing properly and progressively. It is important in business, in any well-organized office, where secretaries are employed to do the work. But it is equally vital in the life of the individual whose time and effort are in many cases his only original capital of success. Authors, professors, public speakers, and housewives find this method invaluable. System as a means, not an end, is fundamental in the life of every individual whatever his career, and, for this reason, pupils in high school should be taught how to study and how to live economically.

b. How to keep Notebooks. Much valuable time is lost by pupils who do not have an effective method of keeping notebooks. The book is merely a loose collection of material, hastily written, unorganized, and soon unintelligible because insufficiently prepared. Two matters of great importance must, therefore, be considered at this time.

(1) *How to take Notes.* Although there is less need of taking notes in high school than in college, what is done should be performed well. Several rules deserve attention.

Notes should be brief but at the same time elaborate enough to prove intelligible for study purposes. On the one hand, it is a mistake to take complete notes. Unless the pupil knows shorthand, verbatim notes are impossible and, it may be added, usually unnecessary. On the other hand, the notes should be complete enough to convey definite and accurate meanings. Otherwise the pupil will be wholly confused while studying.

Speed and accuracy are enhanced by employing abbreviations of common words. The writer early found it helpful to use such a personal system of shorthand. Kg., for example, means knowledge; Km. chemistry; Skpr. Shakespeare, etc. Final letters of words can be omitted in shorthand work. It is well to have a key of such abbreviations on the inside of the notebook cover for future reference. In supervised study a variety of abbreviations might be determined upon for class use, so that every one would know the meaning of them. Study symbols certainly are as appropriate as signs and symbols in mathematics and science.

Some lecturers usually help pupils to take notes by pausing at the end of a sentence. This enables the hearer to get the main points. It is helpful, also, if the lecturer summarizes each section of his discourse or if he uses many illustrations under each head. It is not possible to note all the illustrations. One might be recorded in detail, the others merely mentioned.

If the teacher employs an outline on the board, the pupil should use this as a framework, copying it as the teacher explains the lesson, point by point. To copy the whole outline beforehand is wasteful, for usually many important details are added during the discussion.

By careful writing the first time it will be unnecessary to re-write the notes. The notebooks should be inspected, but in-

spection should not stress appearance of handwriting. Note-taking is not an exercise in model penmanship. If clear, legible, generally neat, and accurate, the notebook has fulfilled its main purpose. Too much time is spent on recopying notes. The writer requires his students to hand in carbon copies of all reference reading, as a timesaver to the student and also a training in preparing notes effectively *the first time*. Although rewriting notes forms a good means of reviewing, an outline would be just as effective.

(2) *The Appearance of the Notebook.* The general appearance or structure of notebooks should follow a uniform plan throughout the class.

On the cover of the notebook (preferably the loose-leaf) should be pasted a slip of paper 2×4 , bearing the name of the school, the pupil, school year, and courses being studied. In the event of becoming lost, the book could easily be identified.

LABEL ON COVER OF NOTEBOOK

THE JEFFERSON HIGH SCHOOL	
NAME OF PUPIL	_____
SCHOOL YEAR	_____
COURSES	_____

FIGURE XVIII

If the school year and courses are recorded in pencil, they can be changed when necessary. Or another label can be

pasted over the old one when the pupil changes school or courses. This renders it unnecessary to buy more than one loose-leaf cover for the high school period.

A left-hand margin of one and one half inches should be observed for minor additions, dates, name of subject or topic, and name of teacher ; for example :

SAMPLE PAGE IN HISTORY NOTEBOOK

HISTORY	
Miss Brown . .	
9-9-45	
War of 1812	
Nov. 2, 1915	

FIGURE XIX

By this method the pupil can easily rearrange his notes by subjects in a chronological and logical order.

It is interesting to note what Washington has to say about the use of notes: "Whenever I set down to write you I read your letter or letters carefully over, and as soon as I come to a part that requires to be noticed, I make a short note on the cover of a letter or piece of waste paper — then read on to the next, noting that in like manner; and so on until I have got through the whole letter and reports. Then in writing my letter to you, as soon as I have finished what I have to say on one of these notes, I draw my pen through it and proceed to another and another until the whole is done, crossing each as I go on, by which means, if I am called off twenty times whilst I am writing, I can never with these notes before me finished or unfinished omit anything I wanted to say."¹

Pages should be numbered as used and by subjects. Each period's work should have its own series of page numerals, in pencil. Later when all the pages of each course are collected, they can be numbered consecutively in ink.

Pupils will find it helpful to make indices of their notes. Indexing requires instruction, and hence forms another unit of study during supervised study periods.

It should be stated in this connection that inserted leaves or marginal notes in the textbook should be indexed by the pupil at the end of the book. The pupil's own indexing is an excellent means of review.

E. Pupils' Comments on their Methods of Studying. Do pupils employ, to any considerable extent, dictionaries, outlines, note taking, etc.? Rickard, in the investigation already referred to, gives the following information on these points:

¹ Paul Leicester Ford, *The True George Washington*, p. 68.

TABLE XIX.—PERCENTAGE USING VARIOUS DEVICES OF STUDY BY GRADES

	HISTORY	HISTORY	BOTANY	ROMAN HISTORY	MEDIEVAL HISTORY	ENGLISH
Year—B and A. Sections combined . .	7th	8th	9th	10th	11th	12th
Percentage knowing the general topic . .	88	82	72	71	70	23
Percentage of each grade using the following methods:						
1. Read once	91	86	81	71	90	77
2. Use dictionary	74	24	9	38	20	19
3. Use maps	71	14	—	42	15	—
4. Re-read once or more	5	45	9	37	40	46
5. Ask themselves questions and attempt to answer	37	—	25	42	25	—
6. Repeat off book	37	17	—	8	—	—
7. Use additional reference	20	55	22	12	55	—
8. Outline	3	—	3	—	—	11
9. Tell story in own words	9	10	—	12	—	14
10. Use comparison and contrast	23	3	—	—	5	—
11. Exercise judgment in the choice of sub-topics	11	41	—	16	45	11
12. Merely recognize that there are points or subtopics	20	34	6	21	35	—
13. Write out notes	—	3	25	8	20	7
14. Use glossary	—	—	—	—	—	61
15. Translate	—	—	—	—	—	11
16. Memorize dates	14	—	—	—	—	—
17. Find the paragraph which gives answers to questions	—	24	—	—	—	—
18. Underscore words	—	—	—	12	15	7
19. Look up references in footnotes . . .	—	—	—	—	—	23
20. Group events about dates	3	3	—	—	—	—

Two results obtained by Giles in his investigation confirm in substance those of Rickard. About 46 per cent of Giles's pupils employed outlines; 43 per cent wrote out notes on their lessons; about 81 per cent in studying history, science, and English literature, etc., tried to pick out the most important

points in a lesson and master them. Table XX contains additional information on these points.

TABLE XX. — METHODS OF STUDY FOUND MOST HELPFUL

	FOURTH YEAR	THIRD YEAR	SECOND YEAR	FIRST YEAR	TOTALS
a. Writing notes . . .	3	3	6	7	19
b. Writing translation .	0	0	1	0	1
c. Outlining	6	11	21	3	41
d. Underscoring . . .	10	10	9	2	31
e. Reading aloud . . .	1	3	1	2	7
f. Reciting to some one	1	1	5	1	8
g. Closing book . . .	5	21	18	19	63
h. Other plan . . .	0	7	13	6	26

Outlining and underscoring are preferred to writing notes.

Summary. It is not a question of whether or not many or all pupils employ these methods (although it is interesting to find how many do favor them), but the question of more fundamental importance is *how* these methods are prosecuted. Underscoring, outlining, notebook work, can be helpful or harmful. Unless they are employed skillfully they are labor and material wasted. If recognized as tools, kept in effective condition, and drilled upon, they can become most useful. They are already part of high school education, but in all too many instances are taught, if at all, only in courses in English. Each teacher will find it an advantage to devote time to this work and to evolve modifications or elaborations of the methods and devices discussed so far in this chapter. Eventually in the fourth year of high school and later in college, each pupil should be able to fashion his own methods with more success if schooled in this kind of work.

CHAPTER VIII

METHODS OF STUDYING (*Continued*)

5. **Reports, Special Papers, Etc.** No small part of the pupil's work consists of handing in reports or papers on various topics. This is an elaborate form of problem assignments, and, when properly done, a mark of high efficiency. It is employed in what has been called the social recitation,¹ which essentially is a prolonged or extended supervised study period.

a. *How to prepare for Writing Reports.* The report, as a rule, consists of a collection of data illustrating some topic, proving an hypothesis, or presenting evidence on some moot question, etc. Whatever the form or contents of the report, it may be called a simple type of research work. It implies originality and organization, and may offer recommendations or state conclusions. For this reason certain principles and rules of procedure should be borne in mind.

Data or references should be organized under separate heads to which all items can be referred. The filing system previously considered is one form of this method of collecting data. Another is illustrated in the accompanying figure. Several pages are shown lying side by side with the topic at the top. Relevant material is noted under each topic. Cards may be used in the same way.

¹ An excellent example of this type is found in *The Modern High School*, edited by Chas. Hughes Johnston, Chapter IX, by Miss Dora Williams, Teacher of Physiology and Hygiene, Boston Normal School, Boston, Mass.

SPECIMEN PAGES OF REFERENCE SHEETS FOR MAKING REPORTS

BIOGRAPHICAL MATERIAL ABOUT LONGFELLOW	SOURCES OF HIAWATHA	INTERPRETATIONS OF HIAWATHA	INDIAN LIFE	WHERE AND HOW DRAMATIZED TO-DAY

FIGURE XX

The loose-leaf notebook lends itself to this method very conveniently. If more than one sheet of paper is required, they should all be pinned or "clipped" together and *each page numbered*.

State accurately all sources of information, giving name of author, title of book or article, publisher or volume, and date of magazine and pages. Pupils as a rule are very negligent in this matter. But it is of utmost importance that they should be trained to give proper credit for information acquired. It is not only just to the author, but it gives strength and dignity and authority to the pupil's statements. A convenient mode of stating the reference is by parenthesis after the point itself or at the close of the paragraph. The reference usually takes this form :

S. S. Seward, *Notetaking*, Boston, 1910, p. 50.

Quotations, besides the usual quotation marks, may be stated in an indented paragraph, about half an inch farther in than the main section, observing this margin to the end of the passage. They should be as brief and as few as possible and employed only for purposes of clear illustrations or very exact language.

When this preliminary work of gathering material is complete, the various sheets, topic by topic, should be collected and the material organized under logical heads, care being taken to discuss each point under a distinct head rather than scattering the material without any clear scheme of arrangement at all evident. Duplicate notes and others not important for the present purpose should now be discarded or filed as the first draft of the report is organized.

The first writing of the report should follow the outline suggested under *b* on next page. But it often becomes necessary to make changes in the arrangement; additions are also needful. The first draft, although the pupil should take the greatest pains to write it well and logically, is rarely finished enough for others' eyes. Revision is a constant necessity.

A convenient device for supplementing the first draft is to add the new material on another sheet of paper numbered like the first sheet of the old material but bearing also a letter. For example, the first page is 10. The added page will be 10^a. On page 10 at the place where the new material is to be added write "insert here page 10^a." If the additional material is brief, an interlinear line or marginal reference will suffice.

The second writing should not be undertaken until the pupil is satisfied that all necessary revision has been made. The second draft should then be written in clear, concise

language, avoiding many adjectives and involved sentences.

After the first or second drafts have been completed, it is a good practice to wait several days or as long as possible before undertaking the final revision and "dressing" of the report. This delay enables the pupil to edit his work somewhat objectively; *i.e.*, he will approach it with more freshness, the sentences perhaps will not seem as smooth as they did at first, and statements made will not seem as forceful as at first. He reads more like a stranger than as the author himself, and for this very reason may be able to edit or revise with more balance, more impartiality. Delay is an advantage also for the sake of including the latest information which will make the report up-to-date. This is less important in school work, but may have value especially in civics or any other form of community assignments.

b. The Appearance of the Finished Report. The final form of the report should be legible or typewritten, with the space between paragraphs slightly wider than that between the lines.

The margin on the left hand should be at least an inch wide — long quotations having a wider margin. Sentences should not extend to the edge or to the bottom of the pages. A margin or frame around the report is desirable.

Important words and foreign words should be underscored, the former with red ink.

At the end of the report there should be a list of references used in preparing the report. The form of this bibliography is suggested under 5 *a*.

The paper should be held together with a clip, folded lengthwise or not at all, but *never rolled*.

A cover of stiff manila paper bearing name of pupil, subject

of report, and date should keep the first page from becoming soiled or ragged.

6. Supplementary Reading. This is the golden age of free libraries and cheap editions. Books are no longer the symbols of wealth and favored learning — everybody who is able to read may do so for the mere wishing. And young people read! Fiction, erotic and adventurous, is thumbed and embraced. Youth is ravenous for adventures under the candle flicker or the glow of the carbon wire. Here is a force, an instinct, an interest to lasso and to harness. There must be time for it; but even more than this, there must be a cultured liking for literature that edifies without moralizing, and informs without consciously instructing. And in addition to this, the pupil needs to know how to read, how to derive the most good and lasting gain from this fellowship with books.

Much of our reading is desultory, sauntering, strolling in its method. It is without destination but delightfully care-free, openly friendly to chance meetings on the way, frankly interested in the many unexpected discoveries made on these excursions. But it is also true that when a Charles Darwin went strolling and when a Beethoven kicked the grass in the field, they saw and heard what other less seeing and less hearing men failed to experience on the same roads. They carried a purpose, — “a goal idea,” — a collection of magnets that drew illustrations, suggestions, and new truths from the road and hillsides.

Too much stress in these days cannot be placed on what has been called “the composite textbook.” The one text course is rapidly disappearing, mainly for the reason that knowledge in all fields is increasing so rapidly that no text can be up-to-date very long or large enough to cover all the essentials of

point of view in the subject. The very best textbooks must be supplemented by additional reading. Reference books are important, as we have seen, but supplementary reading is equally vital in a course that seeks to arouse interest in progress toward truth.

Supplementary reading gains in value — becomes a valuable asset — if the pupil knows what he sees and hears; and if he can find in new pages and less often perused books facts and thoughts that actually supplement what he has studied more formally. He should, therefore, be taught to read with a purpose, always receptive and always equipped with means to collect what he finds in this additional, albeit informal, studying.

a. How to preserve what is read. By employing a simple method of indexing and recording, the pupil is able to refer to what he has read. Some persons spend hours and hours copying passages in notebooks. This is necessary at times, especially if one does not own the book from which quotations are being made; but, as a rule, it is a time-losing method. It is liable to inaccuracies on account of careless copying and removing a selection from its general connection. Furthermore, there is considerable truth in what Sydney Smith says:

“Men seldom read again what they have committed to paper nor remember what they have so committed one iota the better for their additional trouble. On the contrary I believe it has a direct tendency to destroy the promptitude and tenuity of memory by diminishing the vigor of present attention and by reducing the mind to depend on future reference.”

The mind, like the body, is subject to habit control. If one early becomes accustomed not to retain what is read but merely to copy it in a notebook, this very practice be-

comes a habit almost fatal to the ability to remember readily what has been read.

A moderate use of notebooks in supplementary reading is, however, justifiable, providing one does not spend hours copying long selections. Brief, unusual sayings or illustrations and allusions are perhaps all that should be attempted.

b. How to read rapidly. A few simple rules will aid the pupil to accomplish an immense amount of reading each month:

Read sentences, not words. To stop at each word may be important in legal and medical reading, but as a rule it is unnecessary in most supplementary work.

Important words, as a rule, appear at the beginning and at the end of a sentence; the subject, for example, usually being found at the beginning.

Glance rapidly over the paragraph for leading words and sentences. The first and last sentences, as a rule, are most important.

The first and last paragraphs ordinarily are more important than those intervening, but the pupil should get the main words of each paragraph also. The first states the subject or point of view, the intervening ones add points of development and in the last may be found conclusions, summary, or a final vital point.

Practice will facilitate the discriminate elimination of modifiers, conjunctions, repetitions, and the perfectly obvious. If one is reading as a pastime, the increase of pleasure by observing striking descriptions is important; but supplementary reading for the wider range of knowledge does not require this detailed enjoyment.

c. How to copy Material in Notebooks. Much time may be saved if the pupil employs the following method in copying:

Do not copy mere words. Pupils glance at a word in the book, then copy it, and again glance at a word on the page. A more effective method is to read a whole sentence or, if long, the first part of it, and then to copy this. After a time it becomes quite easy to embrace a sentence of moderate length in one glance. The additional value in this method, beyond that of delaying fatigue, lies in the pupil understanding what he copies. Mere copying of words fails to convey any connected meaning, and after copying a brief or long selection the pupil has little or no conception of what he has copied. He has written isolated words — not associated meanings. They do not impress themselves on his mind as connected material — but merely an unrelated sequence of words — and consequently fail to convey a unity of thought. Copying by sentences conveys organized meaning, so that at the end of his writing the pupil has acquired a quite definite understanding of the contents of the quotation. In this way he has actually been studying.

There is, however, a more effective method of preserving the desired material in supplementary reading. Use slips of paper with main subject written at the top, these slips to be used in either or both of two ways:

If the pupil owns the book, he should write on the top of the slip the topic he is interested in and, as he finds references to it in his reading, note on the slip of paper the page of these references with the name of the book. The latter is important, for the same slip can be used in reading other books. When one slip of paper has been filled, of course, others will be added. In the book itself parentheses around the passage will suffice for easy recognition.

If the pupil does not own the book, the same procedure

may be followed with the additional notation of the author and edition, if there is more than one edition. There will then be no confusion when he later wishes to refer to his reference.

All of this takes a minimum of time, but the amount of time saved and the store of valuable material increased by such reference work is inestimable. The slips should be filed in the large manila envelopes or pasted in the notebook under proper headings. Slips of paper may be used also for marking future references. The exact reference desired should be inclosed in parentheses. The paper should extend slightly above the top of the book.

7. **How to prepare for Examinations.** Student language, picturesque and rugged, includes a number of vivid words referring to the preparation of examinations. "Boning," "poling," "cramming," "digging," are some of these pictorial terms borrowed from piscatorial experiences, packing industries, and the life of the soil. They are expressive enough and portray the arduous endeavors of the pupil to memorize in an intense brief period of effort enough facts to "pass" the "exam." And so one who visits the student's room during those strenuous days of manu-mental labor may find the student uniformed with a towel around his forehead, his feet perchance in a bucket of hot water (perhaps to symbolize unconsciously the possibility that all of him may be similarly immersed on the dreaded day of testing), a steaming pot of vile black coffee at his side, and round him books, papers, piles of débris once scattered over his course. There is anxiety a-plenty in the room — a tension of effort that has dangerous possibilities. And this is education !

In high school there is less of this than at college, for parents

see to it that the pupils avoid such evidences of strenuous and semi-annual interest in the noble pursuit of knowledge. But there is just enough of this sort of thing in high school to make it easy for the coming college student to adopt it with little or no resistance.

a. The Use and Abuse of Cramming. It must be admitted that there are occasions where cramming is the only way of escape under a régime of rigid examinations. Much material in the average examination has at best only a temporary or "degree" value. After the examination it is an advantage to forget most of the items insisted upon during the course. As long as teachers stress memory tests there must be a considerable amount of "poling" — it is almost inevitable — in what may be regarded in the main as a pernicious method of testing the process of education.

The true examination fulfills the necessary purpose of reorganization and review of material at points of greatest weakness. To ascertain how much the pupil does not know of the fundamental units in the course is perhaps more important from the standpoint of effective teaching than to know how much the pupil has mastered. If examinations could always be followed by reviews of the weak places, their value would be greatly enhanced.

But as a method of study cramming must be condemned for several reasons.

It discourages progressive organization of material.

It allows for only a superficial grasp of the subject.

It permits only a temporary knowledge of the course, because the object in view is only a brief retention of facts — enough to pass the examination.

It bars out the fundamental purpose of education, — train-

ing the pupil to think and overstresses the methods of memorizing.

It lowers the pupil's mental strength by making him feel insecure — his passing depends on what he can *remember*, but his mental alertness depends upon confidence in his own ability.

It leads to the temptation of cheating. Facts can be copied, but original thinking cannot be anticipated.

It is injurious to the pupil's standing in every subject; for with many examinations to prepare the intense strain of memorizing is likely to reduce efficiency in every examination.

It jeopardizes the pupil's eyesight, physical and mental health more than is necessary.

It practically limits the pupil's education to the knowledge aim; whereas education includes much more than this, — the ability to think, to organize, to apply, to lead.

It produces the attitude that school is an examining institution primarily and teachers relentless inquisitors of knowledge.

b. The Best Way to study for Examinations. The pupil who makes a daily outline or summary of his work, either by some outline form or by fashioning his own review questions, will have at the end of the term a splendid background and framework for the final review. It is the daily organization that counts. There is nothing new in this suggestion, but under the administration of supervised study it becomes part of the pupil's standing. He is marked as much on the daily preparedness as on the final examination, — a preparedness that embraces not merely a factual recitation, but an ability to organize as well. When the time comes for the test or examination, all the pupil needs to do is to review his summaries

and his notes with their supplementary material. He may not pass a perfect examination as to details, but he will give evidence of wide information, of deep-going appreciation of the general meaning of the topic and show that he can move about in it intelligently and thoughtfully. Facts come and easily go when treated merely as facts; but when learned in large connections with correlations and with applications, they have a tenacity that belongs to the well-related parts of any whole. It is because pupils are trained to regard facts in themselves as supreme that they tremble with fear lest these isolated elements of knowledge drop out. But when a topic is studied as a big phase of truth, involving principles, laws, and tendencies, facts are so many illustrations or evidences of the main truth. First, get the large perspective, panorama, sweep of meaning; and then details will fit in with surprising ease.

All this means that the preparation for examinations is continuous — it is like a building rising story by story until at last the day of occupancy has arrived. This is the examination day of builder and structure alike. The final test of the bridge depends upon its ability to stand the strain of construction foot by foot. It must resist its own strain of derricks and carriers inch by inch long before its trusses and arches meet in the finished span or rise in graceful strength in the cantilever. So with the masterful pupil, who enters upon an examination not hastily and strainedly prepared for, but strong and secure in daily understanding of each assignment and the continuous meaning connecting each assignment.

8. How to Memorize. It should not be assumed that because objections have been raised against the almost exclu-

sive method of studying by memorizing that memory is to be wholly regarded as vicious in the learning process. Whatever one's definition of memory may be, it involves the fact that things once experienced can and must be reexperienced if the individual is to profit by his past. Thinking itself is the reorganization of experience so that it can be serviceable in solving new problems. There must be a considerable amount of memorizing in every classroom. Education is impossible without it.

Because it is so fundamental, the pupil should be taught correct and economical methods of memorizing, and he should be trained in their exercise. The literature on the subject is voluminous. References to it are numerous enough outside of school work, but it is only the exceptional teacher who devotes any or considerable time in teaching the methods whereby the imprinting, the recall, the ready reference to things learned may be more effectively achieved. In this chapter it will be valuable to deal with the most successful of these methods.

a. Methods of Memorizing. (1) *A Clear and Accurate First Impression.* What is to be learned will be recalled as it was first acquired. It is the first impression that counts. Facts and relationships learned vaguely or inaccurately will remain so unless revised, and it is a well-known truth that relearning is twice as difficult as the first learning. Time is saved if the pupil makes an effort to obtain, by careful reading or questioning, a clear and accurate knowledge of the subject *the first time*.

(2) *Correct and Numerous Associations.* Each new fact is more easily understood by being immediately associated with previous experience. What we already know receives the

stranger-fact and tries to make it part of the group of knowledge. This is the reason for educated people being more receptive to new ideas than are the ignorant who have no way of anticipating or judging the importance of new facts or views. These associations may be considered under four heads :

(a) *Personal Experience.* The pupil should constantly seek to link up new facts with experience he has already gained. Much of this background of knowledge is enriched by work in other classes. Literature and history and physical geography may be intimately related. General science is taking the place in the high school of diversified scientific courses because the young pupil needs, first of all, a broad knowledge of scientific truth before he engages in special studies.

At first men ridiculed the idea of telephones, for there was nothing in their experience to receive the new truth. But the other day when Vail and Bell talked to each other across the whole continent, the fact caused no excitement; and when a little later it was announced that wireless telephony had made audible in New York and Paris the same human voices, surprise was mild — we were ready for just such an announcement. Suffrage was once a cause of intense warfare in England: the common man had no vote. Enfranchisement of all men was a startling theory and fact of government. It was attacked and bitterly fought, but to-day when women are struggling for what men contended only a few years ago, there is less surprise. Universal suffrage is not a wholly new idea. Past experience accepts and judges this newer fact. The hardships of the early reformers were numerous and bitter because society was unprepared for their doctrines. Columbus was laughed to scorn because up to

his time, so far as men in Spain were aware, no one had sailed around the world. We learn easily by gradual approaches, — easy marches, — not forced plunges.

It is necessary, therefore, to connect the past and present at every step. Each will interpret and reinterpret the other. This process of association is fundamental in maintaining interest and in retaining significant material.

(b) *Collateral or Supplementary Reading.* This topic has already been referred to at some length. Here it is important for still another reason. Few people have time to read all of a book. As a rule, it is not necessary to do so. For the sake of economy and association books should be read by topics. Several books may lie before the pupil. He reads the comments of one author and those of the others. Their views may conflict or supplement. By the method of topical reading he moves topic by topic through several books, and at the end of the term will have read more logically and more widely and also with more discrimination than if he had confined himself to one book at a time. Moreover, by this comparative collateral reading, the pupil is forming rich associations. New facts are more readily and habitually pigeon-holed. There is a place for everything. Memory has become a systematic scheme of reference.

(c) *Whole Method.* In learning a poem or piece of prose where verbatim exactness is required, time is saved by employing what is technically known as the whole method. The more common method, called "the part method," in learning a poem, for example, takes a line at a time and constantly repeats the accumulating lines until the poem has been memorized. By the whole method the selection is studied logically for main and secondary ideas. The mechanical

division into lines and stanzas is disregarded: the poem is learned as a whole.

In more detail the method may be illustrated in the following poem from Rossetti's "House of Life."

"I have been here before,
But when or how I cannot tell;
I know the grass beyond the door,
The sweet, keen smell,
The sighing sound, the lights along the shore.
You have been mine before,
How long ago I may not know;
But just when, at that swallow's soar,
Your neck turned so,
Some veil did fall — I knew it all of yore."

As a rule, young pupils would memorize this poem by learning the first two lines, then the third and fourth, repeating all four. They would then add line five and repeat all that had been memorized so far and then continue. A large number of needless repetitions are here made; illogical associations are formed, and much artificial work is done. Clearly, the poem has one simple theme. "I have been here before." The evidence, — grass with its sweet, keen smell; sound and lights along the shore; and at last the swallow's soar. Memory is revived in one flash by the winging of the swallow. There is a unified thought here that can be stated in a plain declarative sentence. The whole poem is read through, the main thought extracted, and then logically the modifiers are added.

For very brief poems and prose selections the process is much simpler; one can easily discover the main thought. In longer selections the advantage of the method is not apparent

at first ; but the greater amount of attention, logical analysis, and clearer understanding of the subject matter, made possible by the treatment of the passage as a whole, warrant this type of memorizing.

What has just been said about rote or literal memory applies with equal force to logical or idea memory, where the meaning of an assignment rather than every word of it must be learned. If the pupil begins to study each paragraph by itself, he will not appreciate its connection with other parts of the lesson. First read the whole lesson through rapidly — albeit accurately. Then re-read more closely and analytically, as described in the section on Underscoring. This application of the whole method will result in less literal memorizing of assignments, for the pupil soon finds that by this method he can remember the important phases of the lesson.

(d) *Mnemonic Devices.* One not infrequently meets in advertisements the announcement of memory systems that guarantee to improve the memory and thereby to assure the individual a highly successful career. The best of these systems or schools employ mechanical devices of association, — nothing more, — many of them artificial and complex, and others reasonably worth while. Mnemonics are simply elaborate schemes of associating new with old or familiar experience or by comparison and contrast surrounding things desired to be recalled with stimulative associations.

For example, it is easy to remember that Leonardo da Vinci belonged to the sixteenth century by noting that in the name Vinci VI stand for six and the “n” is an abbreviation of *teenth*. Learning vocabularies may be aided by the happy use of synonyms, as suggested by Loiset.

ENGLISH	INTERMEDIATES	LATIN
Breast	front — front view — aspect	pectus
Suitor	Prince Charming — wooed by proxy	proculus
Man	married man — home	homo
Garret	storeroom — grain store	granaria
		GERMAN
Voice	voice lozenges — stimulation	stimme
Threaten	stinging words — stinging bee — drone	drohen
Potato	dig up — remove — cart off	kartoffel
		FRENCH
Tears	hysterics — fainting fit — alarm	larmes
Star	diamond — ball-dress — toilet	etoile
To speak	converse — dispute — parley	parler

Another type of mnemonic associations is illustrated in the names of the brain lobes.

Frontal — probable centers of reasoning — man's *chief* superiority
 Temporal — centers of hearing — *oral* — spoken to hear
 Occipital — centers of seeing — C (see) with 2 i's
 Parietal — centers of motion — Par-t = parting.

A certain amount of exercise in mnemonics as a drill in memory work would not be out of place, providing teacher and pupil bear in mind that all such devices are simply *additional* aids to a more fundamental and inherent association between facts.

(3) *Recall*. An invaluable aid to effective memorizing is the practice of recalling immediately what has been read in each paragraph or on each page. If the pupil cannot recall a single fact or idea on the page he has just read, he may be sure that his thoughts have been wool gathering. Mere reading of words, with one's attention elsewhere, is obviously a sheer waste of time. There must be a first, clear, vivid im-

pression. The test of this first fundamental is made in the reviewing of what has just been read.

Some pupils close the book (Giles found that 68 per cent of his pupils did so) and try to recall what they have just read; others look off into space. At first it may seem to the pupil that slow progress is made by this method; but gradually the habit is formed, and the first reading of the lesson is accompanied by concentration and discrimination. At the close of his reading the pupil can then make an outline by the recall of what he has studied. If he underscores and writes brief sentences in the margin, these devices will help him to recall more accurately.

(4) *Studying Aloud*. The form in which the lesson is to be recited should be practiced upon while studying. If, for example, the recitation deals with mathematics, most of the work will be done in writing, and this method is followed in preparing the problems. But in geometry, besides the figure, there is demonstration to be made aloud to teacher and class. By studying this demonstration aloud the pupil forms the reciting habit and gains in ease and confidence. To accustom oneself to the sound of one's voice while studying is valuable in every subject where verbal methods are employed.

If it is impracticable to study aloud, moving the lips is a good substitute. Both methods tend to keep the mind from wandering. Attention is fixed more easily by these devices.

9. **Thinking**. Investigations by Dr. Lida B. Earhart¹ and Dr. Frederick Bonser,² as well as treatises by Dr. John

¹ "Systematic Study in the Elementary Grades," *Teachers College Contributions*, No. 18.

² "The Reasoning Ability of Children," *Teachers College Contributions*, No. 37.

Dewey¹ and Dr. I. E. Miller,² have shown not only that children do think but also how the thinking ability may be trained and applied in all school work. No one will deny that thinking is a fundamental human capacity. It is tacitly assumed to be so, especially in high school and college; but little time is devoted to the actual demonstration of what it means to think, and how pupils can become proficient in its technic. By some, thinking is regarded as an unusual ability, possessed by rare geniuses, who have never been instructed or trained in the meaning of its various factors, but who evolved their remarkable achievements under the dominance of rare insight.

It will not be denied that philosophy, art, science, invention, poetry, etc., exhibit unusual intellects and that, so far as records go, these distinguished thinkers never received formal training in their high art. But the lack of formal training in this branch of education may account for the rarity of the Kants, Michael Angelos, Huxleys, Edisons, and Miltons. If the schools in earlier days had trained the average boy and girl to think constructively, — just as it stressed mnemonics and formal discipline, — it is likely that civilization to-day would be even more progressive than it is. As the mass of society learns to think, its rarer minds — always to be expected — will loom even higher than they do. The hope of the race lies in an elevated universal knowledge of how to think, and, on the basis of this knowledge, an intelligent exercise of careful thought on the mighty problems of the hour. Doubtless the present war would not be possible if the great bulk of population in Europe had been trained to think on the profound meaning of society, individual rights,

¹ *How We Think*, 1910.

² *Psychology of Thinking*.

wages, and truth in its many reaches. And in our own country, where the ideals of democracy and social efficiency are praised and sought, progress toward this realization will be retarded just so long as the average man and average woman are unskilled in the tools of thinking. There must always be the few to lead and the many to follow, but in the democratic régime the thinking many are privileged to elect as their leaders the trained few; and their choice of these leaders, whether it shall be safe or menacing, depends upon the ability to judge, to foresee, to evaluate issues and character.

Studying of the finest type and as a preparation for sane and safe citizenship must include — nay, more, must be dominated by — instruction and training in how to think in every subject of the school program. Education means adjustment, and adjustment rests upon the ability of each individual to apply experience to new situations in the quickest, most effective, and most permanent fashion. The high school pupil who enters the contest of a career will meet daily new problems (with some familiar phases, no doubt) whose solution will depend not only upon the direct application of knowledge acquired in school or elsewhere, but more often upon the reorganization of this knowledge, upon the selection of elements deemed especially suited to the need of the hour, and upon the determination of how the chosen elements are to be applied and, if necessary, what kind of additional factors are to be sought and where they are likely to be found.

a. The Thinking Process. There is space here for little more than a sketch of what actually takes place when the pupil thinks. Let us suppose that he has been assigned a problem in English, — the description of a county fair. These fairs are common enough and are usually very much alike.

The pupil, however, is expected to describe some fair that he has visited. A number of years ago the writer visited the first fair of this kind in Beltrami County, Minnesota, held in the little village of Blackduck. The county is heavily timbered with a variety of trees, but mostly of pine, birch, and tamarack. Clearings in those days were comparatively few. Much labor in felling and hauling trees, removing stumps, draining the swampy land, building roads and homes was required. The black loam looked promising. Homesteaders and other settlers had dreams of farms and dairying as a consequence of this labor. And so, after a few years of persevering toil, the county had begun to yield its garden produce. The products, it seemed to some of the leaders, warranted as big an exhibit as money and time could afford.

The visitor to the Blackduck Fair may have come with little expectation. But he knew one thing. It was the first fair in that section of the state; the forests were deep, dark, and miles long. Swamps were plentiful; hired labor scarce; roads few and mostly corduroy; money or wealth not in circulation. And now he sees the long shelves of garden truck; wheat of superior excellence; grasses rich and plentiful; flowers, tinted almost in defiance of early frosts; live stock, sturdy and fine blooded. He examines the needlework of patient fingers that have also handled the rough tools of the clearing, but fingers deft with the artistry of needle and thread. He tastes the bread, the butter, the preserves, and the other cookeries bearing blue ribbons, — all this the result of patient toil and sacrifice of a people living in forests near the Canadian border.

The pupil, let us suppose, was at this fair, and he now sets to work to describe it. What process of thinking must be followed?

The vivid picture of what he has seen forms the starting point. This is the raw material of his thought.

Next is the selection from this material of certain more important exhibits not expected so far north and in an undeveloped county, such as wheat, tea roses, red clover.

The significance of these exhibits is judged by comparing them with those of other county fairs and also by the immense amount of labor preliminary to the harvest or yield. The pupil draws on his memory of what he has seen and heard for these additional factors.

But the fair means something for the future. By memory of what has been done and by imagination of what is coming, the pupil's description of the various exhibits becomes even more stimulating, for here are promises of what development of the country will bring to pioneers and other settlers, and also to the general stores of supply of the whole country.

Criticism may now be offered in the light of the conditions in the county; suggestions offered in the light of what is done at other similar fairs.

What the pupil has done may be stated in a few words. He first of all received a clear first impression through seeing and hearing and perhaps touching. The first meaning of all he experienced was determined by similar experiences obtained at visits to other fairs or through reading and seeing pictures. Later upon interpreting what he has seen, the pupil resorts to his memory of what county fairs purpose to accomplish, — to show resources, progress, possibilities. Next he faces the more pressing problem of interpreting and judging the meaning of the fair for the improvement and settling of the country, and he selects certain advantageous products and indicates what is needed in roads, railroad transportation, coöperative

farming, and scientific agriculture to achieve an even greater development.

b. What Thinking Involves. Thinking depends, then, upon the same factors as are necessary in correct studying. This really means that thinking and studying are synonymous: clear and accurate first impressions, organization by analysis, and later reorganization by association so far as demanded by the problem. Thinking is essentially a new organization of knowledge with additional facts sought for if needed. There can be no thinking without something to think with, — a store of knowledge. Herein, to repeat, lies the fuller significance of supplementary reading, observation, and experimentation in every subject of the program of studies. Obviously, memorizing has its important place, but it is only one step in the development of thinking. The ultimate habit of reflecting, weighing, and judging or seeing an issue and a need from several available angles aims at safety, wisdom, economy, and progress in social efficiency.

10. Application. In laboratory subjects there is a constant application of studying by the performing of experiments, making of furniture and dresses, drawing, modeling, farming, etc. There is comparatively little difficulty in finding motivation and vital reality in these courses. But the case is different with the abstract subjects, such as language, history, mathematics. What application is available here? The answer to this question is attempted in Part II. Suffice to anticipate by saying that application is considered from two angles:

a. Doing as a Process of Learning. The common aphorism "Learn by doing" is no longer in need of defense. One finds the truth of this saying illustrated in practically every

school of the land. What the pupil does for himself under proper guidance creates skill and confidence. It establishes proper nerve connections and fixes habits. Supervised study stresses this fact with the accompanying caution that doing must not be impulsive, impatient, or wholly independent. It is correct doing that counts. In the learning process there are inevitably, as Book has shown, subtle errors creeping in, the correction of which retards progress and causes at times heavy discouragement. Unavoidable as many of these errors doubtless are, even under the best of conditions, earnest effort on the part of the teacher must be put forth to forestall as many of the pupil's mistakes as possible. True as it is that doing strengthens impressions and thereby facilitates memorizing, the even greater truth is that first impressions must be accurate and the application of them as correct as possible the first time.

b. Doing as a Test of Learning. Application as a test of learning differs from the one preceding in the amount of proficiency available. The ability to drive a car, make a table, cultivate a good crop, sew a beautiful dress is the result of constant application and eventually establishes the end of learning. To understand the far-removed ultimate causes of the present European war; to be able to describe mountain scenery, narrate an incident, argue a moot question; to be skillful in measurements, in computation, etc., are tests of learning which in and of themselves augment further skill. Examinations with preliminary reviews are, therefore, helpful and necessary, when they test not merely details but the pupil's ability to handle the material in a practical and even original manner. The test of language is translation and reading; the test of mathematics, solving problems; the

test of literature, not so much detailed historical knowledge as appreciation of the best and the ability to judge or criticize a piece of literature.

GENERAL SUMMARY

The machinery of studying considered in these two chapters on Methods of Work indicates a complex skill in the handling of textbooks, summaries, underscoring, outlining, notebooks, reports, supplementary reading, memorizing, and thinking with the constant checking of progress by careful application. These are fruitful topics, essential to democracy's high school, fundamental not only in formal school work, but in private studying at any time. If the pupil becomes skillful in the use of these tools, he will be able to undertake new tasks alone and also to evolve methods of work which for him are peculiarly successful. After all, each individual must eventually fashion his own method of working, but he can do so more quickly and with less need of frequent revisions if he has a general conception of what should be involved in studying.

PART II

CHAPTER IX

SUPERVISING THE STUDY OF ENGLISH COMPOSITION

It is generally believed among school people that no subject in the high school presents so many serious problems as does English. Perhaps no subject is so frequently attacked by reformers and by foes of education. The efficiency of higher education is tested very largely by the graduates' ability to spell, to write a letter or report, and to converse or speak in public with ease and force. Pupils themselves are not enthusiastic about the studying of their mother tongue. J. C. Brown and J. A. Minnick¹ found that English is among the subjects high school pupils prefer to drop either because they dislike it or because they deem it useless. Whatever the reasons may be for the present unrest in the English courses (and some of the reasons are quite apparent) no one will deny that English must remain in some respects the most important subject of the high school program, and that for this reason its teachers and friends must devise methods aiming at a soundly practical as well as cultural plan of development and study.

¹ "A Study of the Preferences of Secondary School Pupils for the Various Subjects and of the Ranking of the Various Subjects on the Basis of Utility as Judged by the Pupils," *Educational Administration and Supervision*, Vol. I, No. 8, October, 1915, pp. 527-545.

English, however, is made up of five or six problems, — namely, grammar, written composition, spelling, oral composition, public speaking, and literature which includes oral reading. Each of these will now be discussed from the pupil's point of view as well as the teacher's in supervising study.

I. GRAMMAR

Should the pupil be required to study formal grammar in high school? May it not be true that much of the dislike toward English is due to the unbalanced emphasis on this particular phase of the course? These are two common questions. Advocates of formal grammar argue that by this study the pupil is trained in accurate thinking and correct speaking. By habitually attending to the niceties of form, he grows to like and to speak with ease the English of educated people. In this way the pupil is able to counteract the influences of an environment wherein the correct form of English is habitually disregarded and even scorned. Doubtless the mark of a truly educated man and woman is their easy observance of grammatical form. "He don't," "I done it," "It is me," "He done it good," etc., are marks of inferiority and often bar the users of them from desirable employment and social connections.

It is doubtful, however, if the study of formal grammar in high school will serve the end desired. Imitation is a powerful counterforce. Pupils may speak correctly in the school, but on the street or at home fall into the habits of their associates. Before reaching high school the pupil should have been thoroughly drilled in correct speaking. This is the period when habits of correct speech are most easily formed, not

merely by book-study but by *close observance of form in every subject*. When one hears teachers in the schoolroom, in the corridors, or elsewhere say "She don't," "It's me," "Sure, we done it," as the writer has heard them on several occasions, one should not wonder if children with the irresistible instinct of imitation speak as their teachers do. In high school the work in English should not be impeded by prolonged drill in grammar. Entrance upon high school courses should rest mainly on the elementary pupil's ability to speak and to write correctly the limited forms of his expression. In high school grammar must be less formal.

Mr. Harold W. Gammans of the high school in Holyoke, Mass., writes of his method in this particular: ¹

"The pupils had grammars but did not recite more than four or five lessons from them. I have never found formal grammar of much practical aid to the pupils in writing, if they have not learned it before they enter the secondary school. As care and interest in writing are developed in the pupils, they will write grammatically in the secondary school."

It may be added that the consensus of opinion at present is in favor of a brief and properly evaluated course in high school grammar with a small amount of attention to parsing and diagraming; with careful avoidance of teaching English from the Latin point of view; with the principal unit of instruction made up of sentence structure based on sentence *analysis* rather than artificial adherence to diagrams and agreements.

1. **How to study Grammar.** A certain amount of time, however, should be spent on teaching pupils how to study

¹ "The Pupil who fails in Secondary School English: How to teach Him," *Journal of Education*, June 3, 1915, p. 601.

somewhat formally the simple essentials of grammatical construction.

a. Formally. The analysis of the sentence is the basis of discriminate study in the selection of topic thought or in the summarizing of a paragraph. Neither of these functions of studying can be performed adequately unless the pupil understands the meaning of each sentence. And this meaning rests, of course, upon a knowledge of how subject, verb, attribute, and modifiers are interrelated. The picking out of the backbone of the sentence, short, long, simple, compound, complex, or greatly involved, need not become a lifeless pursuit, however. Valuable exercises in such analyses should form part of the work in every English course, increasing in difficulty with each year.

Sentences, for example, might be selected from newspaper editorials or news items, from magazines, modern novels, law cases, text-books in subjects other than English. Diagraming should be avoided as long as possible, and if deemed necessary, should employ the Brace Outline referred to on page 182. This is simple and clear, and, furthermore, relates sentence analysis to outlining or analysis on a larger scale. Both are a part of the process of thinking.

It is hardly necessary to require the pupils to copy these analyses. Most of the work should be done in the class on the blackboard or, when feasible, by discussion based on the textbook of the class. One pupil reads his analysis, while others follow by attending to their books. Writing in this part of the work should be avoided as much as possible. *No small amount of dislike toward English is due to the excessive requirements of writing.*

Sentence structure may be studied also by building or ex-

panding simple sentences into complex or compound ; changing order of expression ; studying different ways of expressing similar ideas as found in a number of authors. One pupil, for example, might be given the assignment to write a description of a battle. Others would have assignments in modern war correspondence, Victor Hugo's Battle of Waterloo, Louisa Mühlbach's description of Frederick the Great's campaign in Silicia, etc. Sentence forms in the writings of Henry James, James Huneker, Henry van Dyke, Ernest Poole, Hawthorne, Dickens, and Scott could be studied by this comparative method with constant application by the pupil in sentence structure and sentence analysis.

Gammons in the study cited accomplished laudable results by requiring the pupils to use a simple sentence or a sentence of not over two clauses. Only these two kinds of sentences were permitted, and day after day he drilled them in the discriminate use of these forms. He insisted, also, that the pupils should read their compositions aloud by themselves at home and notice if word groups beginning with a capital letter and ending with a period were at all sensible. Nothing more was required. By listening to the natural division of the sentence into pauses, they were trained to place commas at such pauses. No rules of punctuation were taught. Words and phrases out of their natural order were referred to in class as requiring commas before and after. He did not insist on paragraphing at first. If there were two or more quite evident groups of thought in a composition read aloud to the class, he asked how many paragraphs there should be. Paragraphing, he found, developed fairly well by this method.

b. Incidentally and at Home. Grammatical form should receive attention as part of the study of literature and composi-

tion, oral and written. Doubtless the time will come when pupils will be marked on their correctness of speaking and writing everywhere during their enrollment in the school. Superintendent Alderman's extension of school credits for home work, with careful listing of credit values for the different kinds of home work, may some day include credits in school for correct speaking at home, during meals, before the hearth, in Sunday school, etc. Lists of mistakes to avoid, with demerits opposite each, could be used just as practically as the lists of domestic, industrial, and commercial tasks out of school hours. Such a list would have a favorable influence on all the members of the home. Not until grammar comes to mean more than rules (many of them relics of English different from that of to-day), and receives recognition as a practical, everyday, and generally observed mark of education during the pupil's entire school career in and out of school, can serious attention to its evaluated details result in correct speaking and writing. In other words, every teacher and parent should share the responsibility of helping the pupil to form habits of correct speaking and writing. It is not the English teacher's task alone. Her finest work is easily frustrated by laxness in other subjects and at home. Correct usage in English courses does not automatically spread over into other courses. It spreads only by being directed all along the line.

II. COMPOSITION

The question needs to be asked, What is the specific aim of instruction in writing? It seems an absurdly useless question. Everybody knows why composition is taught. But the cynic is at hand with chilling insistence on conclusive evidence. If we project the point of view far beyond the high

school years, the question really amounts to this: What is the ultimate and practical purpose of high school training in composition? The answer to this question must be considered from two points of view.

A. Written Composition. 1. Studying Theme Writing. Theme work is so deeply intrenched in the English courses that it occupies the bulk of the teacher's and pupil's time. Its purpose is obvious, — to teach pupils how to write. Essays or themes are therefore assiduously studied, reams of paper covered with thousands of words, hours of patient or impatient toil consumed by the pupil writing and by the teacher editing during four years of high school and four years of college. Some teachers of English have invented long series of symbols or signs to be used in the red-ink scrutiny of these compositions. Running through all of this laboratory and factory process of producing skill in writing there is doubtless an honest faith that all of this does accomplish results or that it is the only means whereby writing efficiency can be achieved. In the light of the ultimate and legitimately practical need of skill in composition, some important factors should be noted.

a. Habits of Writing are Specific, not General. The pupil's ultimate need of proficiency in writing English must be a guiding principle in this part of his studying. Will he ever need to write essays after he leaves school? Will the average individual do very much writing aside from correspondence? It is assumed that theme work in English will develop style of fluency in writing at large; but style is specific, *i.e.*, it conforms to the character or nature of the theme being developed. The essay is valuable for the future essayist, not for the business man or even the professional man.

Ability to write in English courses does not necessarily spread over into power of fluent or even accurate expression in history or physics. These have a style of their own. Neither does a carefully written essay mean that the pupil will learn thereby *to speak* more easily and correctly. The two mental processes are quite different and must be carefully developed in their respective fields. Composition, to prove ultimately effective, should deal in the high school with forms of expression and characteristics of style peculiar to the kind of writing used. Motivation becomes easier from this point of view. Interest is more likely to be sustained under this differentiated method of composition work.

b. Fluency and Forcefulness of Expression depend upon having Something to Say. The principal reason for the lack of transfer of ability to write lies in the pupil's paucity of ideas or knowledge in particular subjects. However well he may be able to write in English courses, his expression or style in history, science, civics, etc., will be halting if he does not have a rich background or a well-organized group of facts in these subjects. Language is a vehicle of thought and moves easily only when concepts are large and rich. To be proficient in expression the pupil, therefore, needs training in expression in every subject he studies.

Themes selected from the pupil's other courses as part of the assignments in English work, and exercises in writing answers to questions in these courses as part of his training in composition, are effective means of bringing this about.

c. Coherence and Balanced Expression are determined by Habits of Correct Thinking. The attempt to superimpose forms of

accurate expression on a habitually careless or loose manner of thinking must prove a failure. The new forms of expression have not become habits; whereas the manner of thinking has long been fixed as a habit of mind and will proceed automatically, while the newer facts of the English course will be less likely to find ready expression. This results in an awkward and halting style, however proficient the pupil may be in exercises of English Composition.

d. Interest in the themes for their own sake will vitalize the pupil's work in written compositions. In these days of world conflict; of discoveries in archæology and science; of inventions; of political, economic, social, educational, and religious reforms; of civic improvements such as good road movements, rural transformations, and cities beautiful, it ought to be easy to find large themes both entertaining and practical. The world of sport, travel, industry, music, and literature is replete with life subjects that appeal to the pupil's social instincts. In the selection of themes it is necessary to leave the beaten path and travel less frequented but often more fascinating roads. Pupils like to write about subjects that concern their own lives. The adolescent is intensely interested in himself and indeed has a right to be, for this is fundamental in the unfolding of his individuality.

2. Diversified Forms of Written Composition. The recent attempts of Hillegas¹ and Ballou² to measure the products of composition include the usual divisions of writing into description, narration, exposition, and argumentation. Each of these forms is distinct from the others and must be studied by a method peculiar to itself. Proficiency in the writing of one

¹ *Composition Scale*, Teachers College Publications.

² *Harvard-Newton Composition Scale*, Cambridge Press.

does not necessarily mean skill in handling the others. A few simple rules, briefly stated, for the studying of each of these forms have been found helpful.

a. How to study Narration.

Get a perspective of the story ; *i.e.*, know what the end is to be and work consistently toward this end.

In short narratives, such as are likely to be written in high school, practice balancing the story ; *i.e.*, avoid unnecessary details, wholly irrelevant material, and long, flowery descriptions.

Select a single incident and surround it with a natural, simple setting.

Choose a convenient point of view, telling the story in the words of some character or in the third person.

Limit yourself for the sake of conciseness (preserving ease of expression) to a certain number of words or so many sheets of paper. Reporters, for example, are allowed so much space for a "story." Drill in this will eventually eliminate unimportant details and showy writing.

Narrate something that you are familiar with, however commonplace, and try to give it a fresh setting. Avoid themes that are beyond your present stage of development ; *i.e.*, tell about something interesting to you personally.

Practice narration in letter form, telling a real friend the latest news and some special incident of more than usual interest to both of you.

Tell the story as *you* know it ; avoid copying from others, but use models, changing these from time to time, always bearing in mind that *your* point of view, your mode of expression will give swing and music to the tale ; whereas, in another's language, it may be too evidently not your own or may ap-

pear stilted when mixed with your own attempts. Write as *you feel* regardless of finished form.

Seek to adapt your style to the temper of the incident — quick action in short sentences or crisp phrases; slower movements in longer rhythm.

Use simple words, preferably those of one or two syllables; avoid many adjectives, adverbs, and conjunctions.

Analyze the structure of short stories for narrative form.

b. How to study Description.

Describe something simple at first; attempt only the possible.

Determine upon a point of view. Landscape changes its appearance according to one's point of view. Mountain scenery looks different from the observation car than from the engineer's cab. Be true to what you see from where you are.

Points of view should change as in moving pictures: first a broad panorama; then a "close up" of some important detail.

Be consistent with the natural emotional feelings at the time and place of your description. Things look different in a gloomy ravine from what they do on a sunny ocean beach. Your mood affects what you describe.

Use the imaginative and suggestive method; *i.e.*, avoid excess of detail—let the reader see for himself what you merely suggest. Practice flash descriptions of important details.

Work toward a climax. Reserve the most striking point in your description until the last few sentences.

Contrast, bold or blended, is effective. Just as in a picture the artist seeks to gain contrast by high lights and shadows, so in description vividness is realized by direct and distinct contrast or by a quieter blending and overlapping of differences.

Description by behavior is likewise a good exercise. What

effect does a scene, a person, a series of incidents have on the observer?

Visit an art gallery or study an illustration and describe what you see. Observe the effect that the description has on others. Do they see the picture?

Practice describing the scenes along the way to and from school, or something unusual you have seen. Note the effect of your description on others. Do you hold their attention?

Use as few words as possible and make each word count. Avoid flowery description.

c. How to study Exposition or Explanatory Writing. Probably the pupil will have more need of this and the following form than of the two preceding, for in the busy world of men there is daily need of explaining new things or acts performed, such as the working of machinery, the meaning of a new plan or a new movement, etc. In community civics, for example, and in politics there is constant need of explanations and arguments. The following suggestions for studying will aid the pupil in making his work definite.

Exposition must be clear. An explanation that needs to be explained is hardly an explanation at all. The language must be simple and easily understood.

The process of explanation or exposition must be broken up into steps, each logically related to the other and all presenting a coherent, consistent analysis of the thing being explained. This has already been discussed under Outlines.

Exposition depends also upon careful definitions. To define words or terms concisely and yet with a proper limiting of the meaning requires long practice. Pupils should study defining in their own language the experiences they acquire day by day.

Study headlines in newspapers, titles of chapters, subjects of lectures, advertisements and announcements for striking and terse summaries that are often vividly explanatory. Practice writing such headlines. School and class mottoes are forms of the same type of explanation.

Illustrate as often as possible by concrete cases analogies, comparisons, and contrasts selected from your own, but preferably from the auditor's experience. Diagrams, photographs, or drawings are serviceable in this connection.

Review your course without reference to book or notes, and write an exposition of some part of the subject. Practice commenting on common day issues and note what your weaknesses are in such efforts.

Study typical expositions for the author's method of beginning, classifying, developing, and ending his elaborate unfolding of the theme.

d. How to study Argumentation. Pupils are more familiar with this kind of written composition under the term "debating." The difference between this and the preceding form lies chiefly in the purpose of each. Exposition explains something that the reader is quite willing to accept as true, but argumentation sets out to convince him by carefully presented points of facts that it must be true. The two types are not mutually exclusive, but overlap at many places. A few fundamental rules should be observed.

State clearly in the form of a simple declarative sentence the proposition to be proved. "Preparedness is necessary for the future peace and prosperity of America" is a frequently heard statement in these days. It sets forth clearly something that is being widely debated and discussed.

Select arguments in the brief that can be backed up by evi-

dence and authority. In arguing for reforms of any kind always consider well whether the plan you propose is practicable. Will it work? is a typical American rebuttal to many specious arguments. Weigh the issues involved.

Prepare a brief or elaborate outline of the arguments to be followed. A brief consists of complete sentence points rather than abbreviated statements employed in the usual outline. Each subpoint should support the main head of which it is a part and all main points should consistently support the original proposition. The following is a typical form :

BRIEF PROPER

- I. Football is good for the players physically, for
 - A. It keeps the man out in the open air, for
 - (1) They spend every afternoon at the athletic field.
 - B. It requires a healthful diet, for
 - (1) The athlete cannot eat pastry, and
 - (2) He cannot eat between meals.
 - C. It develops the muscles, for
 - (1) The variety of plays develops the whole body.
- II. It is good for the players mentally, for
 - A. It makes men think quickly, for
 - (1) Unexpected plays are always happening.
 - B. It makes the men resourceful, for
 - (1) They need variety of plays, and
 - (2) They need skill in each separate man.
- III. It is good for the players morally, for
 - A. It develops courage, for
 - (1) It is a dangerous game.
 - B. It teaches self-control, for
 - (1) A man must not be offside, and
 - (2) A man must obey the umpire.

CONCLUSION

Since football helps the players physically, mentally, and morally, it is a good thing and should be encouraged.¹

In less formal argumentation there is no need of a brief. An editorial or article aiming to persuade the reader presents a series of carefully selected reasons for supporting this or that project. The pupil should study editorial writing in newspapers or magazines.

3. **Supervising the Written Composition Work.** The foregoing hints on how to study the four types of composition are merely suggestive of the kind of guidance that pupils need in this branch of their work. This forms part of the program of supervised study of English. A few important additional suggestions are necessary.

a. *There should be a minimum amount of written work.* The bane of teachers and pupils is writing. A certain amount is necessary, but Lounsbury² has well said :

"I am thoroughly convinced that altogether undue importance is attached to exercises in English Composition, especially compulsory exercises; that the benefits to be derived from the general practice schools is vastly overrated; that the criticism of themes, even when it is fully competent, is, in the majority of cases, of little value to the recipient; that in a large number of instances the criticism is and must be more or less incompetent; and that when the corrections which are made are made inefficiently and unintelligently as is too often the case, the results are distinctly more harmful than helpful."

¹ Canby and others, *English Composition in Theory and Practice*, pp. 175-176.

² "Compulsory Composition in Colleges," *Harper's Magazine*, November, 1911, Vol. CXXIII, pp. 866-880, or Judd, *op. cit.*, pp. 171-172.

b. "*Editing to kill*" and the "*tragedy of red ink*" are unwise means of developing style. Many English teachers allow the pupils for a month or more to write freely, idiomatically — even with slang — in order to encourage ease of expression. Gradually correction of mistakes is introduced, but not by covering the composition with red ink. Gammans¹ refers to his method :

"I read the daily compositions of every pupil to the class, making corrections as forcibly as possible. Each pupil heard about his own particular errors or merits and those of the other members of the class. He seldom, however, saw his errors as no papers were handed back to him after the first few days. I think this is a point which all teachers should consider. I have not been able to see that any pupils in secondary schools and in the freshman year of college receive much benefit from having their exercises returned to them with their mistakes underlined to be corrected, or corrected by the teacher. Its usual effect on the pupil who needs correction and help is to discourage, puzzle, and bore him. I attempted to be kind in making these corrections before the class and used no sarcasm."

c. *Reading the best compositions before the class*, school, patron's leagues, or publishing them in local newspapers or in the school magazine provides the wholesome stimulus of an audience.

d. A "*standing*" assignment, consisting of a large problem to investigate and report on from time to time, adds to the practical value of composition work. Such problems are listed under "How to Study Civics."

e. *To develop style requires many years.* Only a little can be accomplished each term or each year. For this reason there

¹ Op. cit.

should be a stressing of certain fundamental factors in any kind of writing; for example, quick preparedness to write, systematic collection of material, automatizing of simplicity, clearness, conciseness. The pupil should be trained to write minutes of meetings in correct form, letters of various kinds, social and business. The more elaborate and vocational kinds of writing should be introduced when the pupils are reasonably certain of their choice of career, but there are forms of writing everybody should know, such as letters, orders, news items for publication, directions to friends coming on a visit but unacquainted with routes and locality. In a word, the pupil should be trained in the kind of writing that belongs to efficient citizenship. Sentence structure, punctuation, and the like can be developed through these media just as well as by means of the ordinary theme work.

f. Mistakes calling for special attention should be reduced to a minimum. Throughout the four years or six years of the high school period the following common mistakes made by pupils should receive careful notice by a spiral method, — each year's work embracing drill in all of them but with lessening amount throughout the years, except when the tenacity of these faults demands special drill. But all such drill should take place in the quiet of the personal supervision between teacher and each pupil.

COMMON MISTAKES IN ENGLISH

- | | |
|-------------------|---|
| 1. Diction. | 6. Agreement between subject and predicate. |
| 2. Locution. | 7. Adjective for adverb and <i>vice versa</i> . |
| 3. Slang. | 8. Misuse of <i>shall</i> and <i>will</i> . |
| 4. Colloquialism. | |
| 5. Case. | |

- | | |
|------------------------|------------------------|
| 9. Sequence of tenses. | 14. Imagery. |
| 10. Participles. | 15. Euphony. |
| 11. Unity. | 16. Form of discourse. |
| 12. Coherence. | 17. Ambiguity. |
| 13. Figures of speech. | 18. Spelling. |

It will be agreed that here is a large program. To cover all of these errors in one year and at the same time sustain interest is a comprehensive and discouraging task. It will be more feasible to select the mistakes most common and supervise the study of their corrections.

g. Spelling should be studied mainly by drill in writing, preferably in sentence form rather than in word lists. The old-time spelling bee was unquestionably socially very important. The custom, however, of "spelling down" by means of hard words and hailing the victor as the best speller had its serious faults. The chief of these ignored the law that practice should follow as nearly as possible the channel of application and should have, as nearly as possible, a setting similar to that of the habit applied. Spelling is a part of written composition, and only rarely, as in dictation, is it employed orally. Individuals who write correctly often find it difficult to spell orally quite common words. Another mistake of the spelling bee was the testing of spelling ability by long and unusual words. There is little need of such knowledge. Supervising the study of correct spelling of words in daily usage is all the teacher should aim to accomplish.

B. Oral Composition. The emphasis long placed on written work in English has resulted in judging oral work as of secondary importance. Or, if not deemed of secondary importance, the methods of declamations and elocution have lowered it, in the opinion of the boys, especially, into a subject

suited only for girls. Oral composition has been limited to "public speaking" courses with the familiar and distressing exhibitions of school oratory and other forms of elocution. It is unfortunate, to say the least, that oral composition has not received the careful organization and method of teaching assigned written work. Most people speak more than they write, and many of them succeed or fail, largely because of skill or defects in ordinary conversation. Important as it is for individuals to be able to speak in public, it is much more important that they understand the art and technic of conversation or private speaking. It will not be out of place, therefore, to consider in this chapter some of the factors that should be noted in teaching pupils how to study oral composition.

I. How to study Oral Composition. As already indicated, oral discourse falls naturally into two divisions: (a) conversation and discussion; (b) public speaking which embraces addresses, after-dinner speaking, debates, and artistic reading.

a. Conversation and Discussion. One hears it often stated that conversationalists are born, not made. Loose generalizations of this sort based on the belief that achievements in any field are possible only to those whom the gods favor, result in extended mediocrity among the majority who, possessing less talent, could make praiseworthy use of their powers by careful training. To converse well involves among others the following factors:

(1) *Broad General Knowledge.* Conversation must have a common ground. Each partner in the conversation must know something of what the other is speaking about. The broader one's culture, acquired through reading, observation,

or travel, the easier does it become to meet people of walks of life different from our own and to establish lines of intercourse that eventually lead to intimacy or friendship. The high school pupil, therefore, should be required to read newspapers every day, magazines, and the books generally read, so that he may have opinions on the facts or events discussed by the average individual. Visiting local industries and points of interest, noting with the reporter's — not the gossip's — keen sense of news, and appreciating the human interest in his environment will gradually enrich his store of common information.

(2) *Special Knowledge.* Each individual has, or should have, his own particular interests about which he should be able to talk with enthusiasm, conviction, and human appeal. Most of us are afraid of being enthusiastic; it seems to lack dignity, but beneath intellectual refinement and conventional reserve there run the deep torrents of emotion that help to turn the wheels of progress, economically and socially. Dare to be original, — to be just different enough from other people to define the limits between them and you. This need not lead to the free-lance attitude or to the pseudo-Bohemian disregard of necessary conformity to group standards. High school pupils should be encouraged to analyze what they like in others. This at first may be a difficult undertaking, but much of the difficulty is due to habitual neglect of this important treatment of acquaintances and friends.

Each pupil should study or do something that eventually develops into either expertness or a certain amount of eminence, locally at least. He should be encouraged to speak about this chief interest at a social hour. One of the five hours each week during the four years that English teachers

rightly insist upon having, might well be devoted to such class conversations.

(3) *Good Listening.* The art of listening is just as important as that of speaking. The good listener pays close attention to what the other is saying, even though it may be somewhat boring. How often one finds people who are eager to talk, but impatient, mind-wandering, indifferent while others speak. Half the battle in good conversation is to have an interested auditor whose facial expression and whole attitude respond to the rhythm, the thought, the intensity, or the mood of our remarks. The sympathetic listener who appreciates our points of view patiently waits for his time to speak, tactfully differs from our own opinions, and expresses in look or word praise without inordinate flattery, lubricates the wheels of verbal intercourse and not infrequently helps to evolve a brilliant conversationalist.

(4) *Beginning and Closing a Conversation.* Most of us begin with the weather. It has common interest. It is an easy preliminary to more vital topics. We ask about each other's health and less private experiences, and then launch out into a dialogue about some topic of mutual interest. The writer knows a brilliant conversationalist who rarely begins to talk about the weather. He makes it a point to select, after the first greeting, some beautiful picture or ornament in the room, and then leads the conversation into channels of art, and always seeks to leave some cheerful thought that makes his call an angel visit indeed. Others have seen something interesting or have heard something amusing that by a little skillful resetting dovetails easily in the other's life. A good story, a witty remark, an opinion on the leading news item of the day, a compliment on the appearance of the neighborhood, the children

(a splendid starting point in families with children), etc., are other means of beginning a conversation.

In high school part of the English course might well deal with the various ways of beginning and closing conversations. We struggle over these problems in letter writing and in general composition. The good conversationalist makes a study of the personal likes and activities of other people. Conversation does not just happen. It is well prepared for, and after a time becomes easy and attractive.

(5) *The Attitude in Conversation.* Should we be very formal, *i.e.*, observe in detail a stiff, labored, technical attitude? Again, the caller must not allow conventionality on the one hand or overfamiliarity on the other to destroy individuality. We naturally stand in awe before great persons and usually should wait for them to direct the conversation. But it may happen that the great person is unable to adapt himself easily, and that, therefore, his embarrassment spoils what ought to be a most helpful meeting. Under such circumstances others should tactfully lead the conversation, remembering that great people are very human and not at all indifferent to the sidelights on life led by their fellow men.

The high school pupil should study correct form of social intercourse, the niceties of courteous behavior, and the customs of different classes of society. Knowing them, he will be able to adapt himself more easily to the customary restraints of the occasion. A brief story to the point, a little dash of comment on a matter of public interest, a friendly solicitude for the other's success, etc., — these little personal expressions can be made naturally and effectively even under the restrictions of social form.

(6) *The Voice in Conversation.* Well modulated, clear, moderately slow, avoiding shrill pitch, or very loud speaking are a few of the important things to notice in the conversational voice. Avoid the affected accents, but speak pleasantly in a natural voice. Be yourself, not somebody whose voice you think very beautiful, but which becomes very unattractive when imitated by others without careful training.

(7) *Models of Conversation.* Read conversations in biography and the best fiction.

The foregoing suggestions apply in general to discussions. Courteous deference to others while they are speaking, ease, human interest, definiteness, general information, together with a certain amount of expertness or exact information, are essential in any discussion of a more private character.

b. *Public Speaking.* The former phase of oral composition is the more important for most people. But no one is wholly barred from the occasional invitation to speak in public. Ordinarily it is assumed that professional speakers, such as lawyers, ministers, lecturers, and political candidates are the only ones who should know the "tricks of oratory." In a democracy, however, where each citizen has a voice and a vote in the government, he should be able to use the privilege of free speech to the best advantage. For this reason too much emphasis cannot be placed on the importance of public speaking as a part of the English courses in high school.

(1) *After-dinner Speaking.* Many a good banquet has been lamentably spoiled by unskilled after-dinner speakers. The reason for the custom of indulging in this frequently doubtful practice lies mainly in the fact that after an individual has been well fed the resulting state of euphoria or well-being makes him more easily receptive to new ideas or to plan diffi-

cult undertakings. It is a social hour, and man is kindly disposed when seated with his fellows around the festal board. A good after-dinner speech, a course in the "feast of reason," is a fitting supplement to the material part of the hour. The occasion only rarely serves for an elaborate presentation of policies or projects. Usually the after-dinner speech is made up of felicitations, a good story, a brief eulogy (if occasion so requires), and a line or two of more serious matter.

High school pupils, in connection with domestic science courses, might well be trained in this art at an occasional banquet served by the class in domestic science. They should observe the following rules in studying after-dinner speeches:

Read model after-dinner speeches by Chauncey Depew, Simeon Ford, and others.

Make the speeches appropriate to the occasion of the banquet.

They should be brief, — rarely more than five minutes unless the speaker is the only one and has been invited to speak on an important subject at this occasion.

A brief, pointed story is always in place and often is sufficient.

Avoid flowery language, bombastic oratory, extravagant praise, and unbalanced personal pledges that commit one either beyond reasonable realization or to sham and retrenching.

The toastmaster should be addressed first and then the guest of honor if there is one.

(2) *Addresses.* It is impossible here to discuss in detail the principles of preparing and delivering addresses. The high school pupil, however, will find it profitable in studying this topic to note the following principles:

An address is prepared for many people and therefore should seek to interest not only the particular audience hearing it, but certain individuals in the audience.

Always speak to *one* person in the crowd. Aim to attract him, to convince him.

Begin the address, if possible, with a reference to some incident of common interest to your audience. *Begin where your audience is and lead them to where you are.*

Delivery should be easy, not artificial. The following lines are often quoted as suggestive of a psychological approach :

“Begin low,
Proceed slow,
Rise higher,
Take fire,
When most impressed,
Be self-possessed,
To spirit wed form,
Sit down in a storm.”

The style of delivery developed in debating societies or by some teachers of elocution is most unfortunate. The author saw a ludicrous and at the same time pathetic illustration of this in the effort of a university graduate. He appeared before a large body of educators to present a very important organization. His face was flushed; he assumed the hackneyed posture of right foot forward, straight back, head up, hands at fixed angles grasping his notes. His opening sentences echoed the bombastic thunderings of an oratorical giant. For nearly ten minutes he continued in this vein and then quite unexpectedly descended to the realm of human discourse, continued in an earnest, rather informal manner, and finished his presentation with considerable force.

The finished orator with polish, correct gestures, fine modulation of voice, and also something worth saying is always an attraction. But what is needed by the average citizen who does not aim to be a professional speaker is something less technical than this. He needs a strong, well-controlled voice, simple, forceful language,

appropriate gestures, and the knack of clinching a statement with an apt illustration.

Gestures are as much a form of language as are speaking and writing. The fist shaken in the presence of another is well understood; the pointing finger, sweeping arm, shrug of the shoulders, wave of the hand, extension of the arms slightly bent, the tense projection of the arm with hand at right angles and palm away from the speaker are forceful and unmistakable. To ignore the training of gestures is a serious defect in most effective public speaking. What should be avoided is that finesse and overdelicacy of facial expression and posture that very properly belong to schools of expression or courses of artistic reading, but not to a general course in public speaking as here defined. There is considerable truth in the statement that enthusiasm and earnestness employ correct gestures almost instinctively. To overemphasize gestures may lead the attention away from the subject matter of the speech to the form of it, and this results in artificial delivery.

At first it is important to require pupils to write and to memorize their speeches, but very early they should be permitted to use only notes, and later to speak without any notes at all. It should be noted, however, that speaking from a few notes is customary even among the most celebrated orators. A small piece of paper with the main points and other reminders is not a serious hindrance.

(3) *How to prepare and use Notes in Public Speaking.* The notes should be brief and clearly written; each point well separated from the others; a small card about 2×3 is convenient, with writing on one side only. If there are about ten paragraphs in the speech, it is helpful to note the opening line of each, or the main subject of each.

The following notes on *The Life of the Lumberjack* illustrates the principles set forth :

- I. Instinctive interests in wild life — illustrated in fiction.
- II. Description of the country.
230 miles north of Minneapolis; 150 miles west of Duluth.
Long winters. In 1900 unbroken wilderness.
- III. The home of the wandering lumberjack.
50,000 of them.
What is a lumberjack? Story of stranger.
- IV. The past life of the average lumberjack.
- V. Description of his life.
 1. Trip to camp; the forest; lost in snowstorm.
 2. At the camp — the bull-cook; cookie, etc.
 3. Supper in a lonely cabin.
- VI. The lumberjack in town.
 1. Life in saloons.
 2. Hospital.
 3. Employment agencies.
- VII. The lumberjack and modern industry.
 1. The lumber industry.
 2. Indian in woods.
 3. Adventure with wild animals.

In using the notes the speaker should seek to include more than one line at a time. While speaking on one point glance at the card to ascertain what comes next. This does away with the awkward pause while the speaker is looking for his next point. The notes should be as inconspicuous as possible. If there is no reading desk available, the card should be held in the left hand, the right, as a rule, being employed in gestures.

c. Debating. Usually this is cared for in debating societies, and teachers are called upon for references, arguments, briefs, etc. The work is often done haphazardly. There are books a-plenty on debating, also pamphlets with topics and arguments and rules of debating. It is assumed in this chapter

that debating belongs to the English courses as a vital part of the classroom work, necessitating the teacher's supervision from beginning to end. A few suggestions are important.

Debating is an exercise in reasoning. A simple study of rudimentary logic would be helpful. The fallacy of an opponent's argument can then be challenged.

Arguments should be based on fact not mere opinion.

Facts should be weighed by conditions that caused them.

Sources should be carefully evaluated and accurately stated or readily available when needed.

The topic must be very closely defined, and all arguments must deal with the topic as defined.

The practice of writing briefs (discussed on page 234) is important for clear, logical, and fairly complete presentation of arguments.

Pupils should be assigned lessons in well-known debates and practice constructing their debates in agreement with the models selected.

At first it is necessary for the pupil to memorize the opening speeches, but the aim should be to develop fluent and logical extemporaneous speaking. This requires confidence, much knowledge, organization, and a fairly rich vocabulary. Speaking extemporaneously is a habit formed by attentive repetition or frequent practice in every subject. Help toward this end is derived from more elaborate answers to questions in every course.

Rebuttal depends upon concentrated attention to everything the opponent says. The keen debater will detect misapplications or misstatements of facts, wrong inferences, and poor judgment in the stressing of unimportant points. Practice in meeting arguments, criticizing statements, challenging opinions, and conclusions should form part of the pupil's work in every course of the high school. It involves thinking, and this in turn rests upon rich information. The critical attitude develops slowly, but it should

be a fascinating part of the teacher's work to excite pupils to criticize in a lively, fair, impersonal, and constructive manner.

d. Artistic Reading. This has taken the place of the old-fashioned declamations or recitations, with profit to everybody concerned. Reading is a fine art and all art is interpretation. To read well depends upon the rudiments of sentence structure and sympathy with the author's point of view. Facial expression, simple gestures, restrained emotionalism, suggestive intonation, appropriate attitude that radiates an atmosphere, are all essential to the artistic performance in this field.

Besides the rules suggested under public speaking the following are important in this connection :

Understand as well as possible what the author means.

Picture as vividly as imagination based on knowledge permits what each character looks like and probably feels under the circumstances of the story.

Avoid overacting, ranting, tragical postures.

Select for reading what *you* can do well. Never attempt a reading that others give if you are reasonably sure it is beyond your ability.

If a book or manuscript is used, know most of it without referring to the book. Turn the pages very quietly and as secretly as possible.

Simple stage setting, such as table, chair, lamp, is helpful, but depend mostly on your own interpretation to convey the picture.

If your memory fails at any point, be determined to remain calm ; invent appropriate phrases while you approach nearer to the prompter or the book. Never pause awkwardly. *Act* under all circumstances. Most of the audience will not detect the change of words, and those who do will sympathize with your difficulty.

Select hopeful readings ; avoid the morbid, the trashy, the repel-

lent. Make your performance a contribution to others' welfare as much as to their enjoyment.

The program should be arranged on the following principles, stated in their order of application on the program :

PART I

1. Brief, cheerful, but not humorous selection.
2. A humorous reading — a George Ade fable, for example.
3. A simple romance — Gilbert Parker's "Sweethearts."
4. A thoughtful reading — Maeterlinck's "Blind Men" or Van Dyke's "Blue Flower."

PART II

5. A pleasing bit of philosophy — "Mr. Dooley."
6. A stirring selection — "Laska."
7. A string of good jokes or a ghost story.
8. A brisk, happy, and also meaningful selection.

The program should last about an hour and a half. Selections can be abbreviated when necessary, and often for public reading it is advisable to make such excisions of long descriptions full of confusing detail.

GENERAL SUMMARY

An attempt has been made in this chapter to indicate some of the ways and means whereby courses in written and oral composition may be organized to serve legitimately cultural and practical ends. Supervising the study of English is, after all, principally a matter of supplying wholesome motivation and directing the pupil in worthwhile applications all along the line. The writer feels that what is needed is constructive

criticism and courage to break with the past in English work. What has been suggested in this chapter, especially, aims to stimulate teachers to make their courses different from others in manner of approach, development, and application. English is practical and must be supervised mainly from this point of view.

Composition work is much like modeling in clay. There must be the raw material, properly mixed, deposited on the board, roughly pinched, pounded, and thumbbed here and there before the finer work begins. First knowledge; then careful selection of topics of individual interest, the rough sketching of the first draft; and then frequent revision, improvement, and finally achievement. This is true of both the written and the oral forms of composition.

CHAPTER X

SUPERVISING THE STUDY OF HISTORY

I. THE PUPIL'S ATTITUDE

IT is the irony of educational fate that what ought to be the most fascinating subject in the school program is all too often regarded by pupils as uninteresting and even useless. It is a mere platitude to remind ourselves of the fact that the average and normal high school pupil is deeply moved by adventure and romance. An historical novel or romance with royalty and courtiers, beautiful princesses and bold soldier-heroes appeals to the social and sex instincts of young people. This is granted, and under proper conditions should be encouraged. But can any novel or romance be more thrilling than many periods of history? Modern industry, invention, institutions, and customs originated and have been evolved under circumstances "stranger than fiction," but the glory of this fact somehow fails to arouse the high school pupil.

1. **Pupils' Reasons for Disliking History.** Wayland¹ cites a few reasons for pupils' disliking history. The pupils themselves gave these reasons:

I did not find it interesting.

I had never seen any historical places.

I did not know why I was studying it.

¹ *How to Teach American History*, Chapter XVII, 1915.

My teacher did not like it.
I was entered too high.
I was given a book too hard for me.

Other pupils stated that the teacher simply heard the lesson ; other teachers taught only facts and dates without any stories or interesting things.

Apparently the main criticism in all of these replies is that somehow the teacher failed to make history athrill with life interest. In a recent investigation J. C. Brown and J. H. Minnick ¹ found that dislike and lack of usefulness were the prevailing reasons for boys' and girls' wanting to drop Latin, art, manual training, mathematics, and history.

2. **A New Point of View needed in Studying History.** High school teachers are not wholly, nor perhaps chiefly, to blame for this condition. The course of study in history and a stubborn community loyalty to traditional subjects are in part responsible. The overcrowding of the program of studies with many additions but rare elimination of subjects is another reason. Under crowded schedules of required and elective courses, with the effort to maintain some sort of continuity or sequence of courses, ancient, medieval, modern, and English or American history cannot be studied by every pupil. The consequence is that pupils elect one of these together with the required American history, but, lacking the other departments of history, fail to obtain the needful background or continuity, without which historical study is indeed confusing or narrow. The pupil fails to see history big with world meaning and electric with life movements !

Another reason for the pupil's lack of interest in history is due to what has been called the encyclopedic method of

¹ Op. cit., pp. 527-545.

teaching and study. Too many details are included in the course. There seems to be wanting a careful balancing of men and events. Judd calls attention to the fact that too much time is spent on ancient and medieval history to the neglect of what the normal pupil is vitally interested in — namely, modern and contemporaneous history. The pupil becomes lost in a wilderness of dates, names, battles, reigns, royal houses. He sees facts like archipelagoes, scattered without apparent relationships. When his course is finished, he cannot feel sure that history means something definite.

Two striking attempts have been made to reduce the number of facts required in elementary American history. The Report of the Committee on Elementary Course of Study of the Minnesota Educational Association, Bulletin No. 51, March, 1914, contains the following suggestive list, introduced by the following important statement :

Exact dates are of secondary importance and events should be related in time to one another. For purposes of examination only the following dates should be required :

- | | |
|-----------------|---|
| 1. 1000 (about) | Norse discovery of America. |
| 2. 1492 | The discovery of America. |
| 3. 1519-21 | Magellan sails around the world. |
| 4. 1607 | Settlement of Jamestown. |
| 5. 1619 | Slavery introduced into Virginia. |
| 6. 1620 | The Pilgrims land at Plymouth. |
| 7. 1643 | The confederation of the New England colonies formed. |
| 8. 1754 | Colonial Congress at Albany and Franklin's Plan of Union. |
| 9. 1759 | Wolfe captures Quebec. |

10. 1765 Passage of the Stamp Act and the meeting of the Stamp Act Congress.
11. 1775 Battles of Lexington and Concord and of Bunker Hill.
12. 1776 Declaration of Independence.
13. 1777 The surrender of Burgoyne at Saratoga.
14. 1781 Cornwallis surrenders at Yorktown.
15. 1789 First Congress assembled in New York.
Washington inaugurated President.
16. 1793 Cotton-gin invented by Eli Whitney.
17. 1803 Louisiana purchased from France.
18. 1807 First trip of Fulton's steamboat.
19. 1812 War declared against England.
20. 1813 Perry's victory on Lake Erie.
21. 1820 Missouri Compromise adopted by Congress.
22. 1823 Monroe Doctrine announced.
23. 1826 First railroad built in the United States.
24. 1844 First telegraph line established.
25. 1846 Invention of the sewing machine.
26. 1846-48 War with Mexico.
27. 1848 Discovery of gold in California.
28. 1850 Clay's Compromise adopted by Congress.
29. 1858 Minnesota admitted to the Union.
30. 1861 Succession of the South.
31. 1862 Battle between the *Merrimac* and *Monitor*.
32. 1863 Emancipation Proclamation.
Battle of Gettysburg.
Battle of Vicksburg.
33. 1866 First Atlantic cable completed.
34. 1867 First telephone patented.
35. 1878 Electric light invented.
36. 1898 War declared against Spain.
Battle of Manila.
37. 1903 First wireless message sent across the Atlantic.
First message sent by the Pacific cable.

Another list compiled from seventy-three replies, and ranked in the order of their most frequently stated evaluation, shows an interesting selection of dates regarded as important in American history in the elementary school.¹

RANK	DATE	EVALUATION INDEX	RANK	DATE	EVALUATION INDEX
1	1776	1323	17	1775	585
2	1492	1261	18	1781	584
3	1607	1163	19	1823	526
4	1789	1100	20	1846	470
5	1620	961	21	1628	467
6	1803	955	22	1754	421
7	1861 (Apr. 14)	901	23	1865 (Apr. 14)	389
8	1787	821	24	1688	373
9	1863 (Jan. 1)	808	25	1857	354
10	1820	793	26	1588	301
11	1812	752	27	1863 (July 7)	299
12	1765	629	28	{ 1522	250
13	1783	618		{ 1778	
14	1865 (Apr. 9)	601	29	1867	185
15	1850	591	30	1885	175
16	1854	590			

An interesting fact in connection with this composite list is that Professors Albert Bushnell Hart and Edward Channing (two eminent historians) placed the dates in essentially the same order by independent judgment.

Professor Charles A. McMurry believes that what is needed in every subject is a few large type lessons, rather than a reduction of dates or events. History should be studied from the institution point of view; as, for example, The Rise of Liberty, The Development of World Federation, The Evolution of Congress, The Expansion of Trade, The Growth of

¹ *School and Home Education*, December, 1914.

Industry, The Progress of Education, The Emancipation of Woman.

3. **Educational Value of History.** The foregoing references to conditions universally present in high schools suggest that it is necessary for teachers of history to have before them a very definite aim in arousing interest in and supervising study. Many suggestions and opinions have been expressed. They may be summarized under the following list of aims in the teaching of history:

(a) To interpret the meaning of modern institutions by tracing in bold strokes their origin and evolution.

(b) To appeal to the pupil's interest in his fellow man by acquainting him with the great characters, illustrious deeds of the past, and stressing the important fact that men in early times were dominated in the main by motives and passions similar to our own. This should lead to sympathetic criticism and sane emulation.

(c) To study facts accurately and always in historical relationships. Isolated facts, says Bushnell Hart, are not in themselves history.

(d) To arouse a healthful nationalism by acquainting the pupil with viewpoints, customs, traditions, tendencies, and ideals of other nations in contact with which his own nation should and must undergo readjustments. Patriotism that is blind to the good and even superiority in some respects of other countries is narrow and anti-social. True patriotism must always be embossed on a sympathetic cosmopolitanism. This is especially significant in these days of portentous scene shiftings on the stage of Europe.

(e) To train the pupil to organize historical data into large concepts or historical ideas so that liberty, state, politics,

classes, democracy, etc., loom up as large and rich world ideas, long changing and ever swinging into new meanings.

II. THE AIMS AND CORRESPONDING GENERAL METHODS

Professor Albert Bushnell Hart ¹ groups aims and methods in history in a suggestive way which may be tabulated as follows :

AIM	METHOD
1. The study of facts and the meaning of their grouping.	Study of textbook ; recitations.
2. The study of relationships between facts.	Lectures or talks by teacher. (Exposition.)
3. The study of organized facts in logical outlines.	Topical method or problem assignment.
4. Historical critical judgment.	Pupil's discovery of topics and extensive outside reading.

III. HOW PUPILS STUDY HISTORY

Before attempting in some detail an analysis of how the study of history should be supervised, it will be suggestive to review briefly reports on how pupils at present are trying to master this subject.

1. **Johnson's Report.** Johnson, in the report already cited in Chapter VII, summarizes his findings as follows. Arranged in the order of their frequency, pupils study history by

- a. Repeated readings.
- b. Selecting important topics. (Giles found that about 81 per cent of his pupils did this.)
- c. Reflecting upon the lesson.
- d. Reciting to oneself.

¹ Judd, *Psychology of High School Subjects*, 1915, p. 374.

- e.* Reciting to pupils.
- f.* Imagining place and events.
- g.* Making a map.
- h.* Writing down the lesson.
- i.* Remembering one event by another that occurred at the same time or is otherwise related.

2. **Rickard's Investigation.** Rickard in his study cites the methods employed by a pupil age twelve in Grade 7 A.

- a.* I read lesson over.
- b.* I read about it in other books.
- c.* I look up words I do not understand.
- d.* I then make an outline of paragraphs and look up each topic.

SPECIAL DEVICES

- a.* I put myself in the place of one of the characters in the lesson.
- b.* I shut my eyes and think of it as a picture, one scene at a time.
- c.* Sometimes in battles, I read the battle over, then draw a plan of the battle.
- d.* I locate in the geography places mentioned.

Another pupil, Grade 10 A, referred to in Rickard's report, describes her method in studying Roman history.

- (a)* I read each separate paragraph and get the main points.
- (b)* I discuss to myself freely the main points and their relation to other parts.
- (c)* I read it all over again to be sure I have not missed a single point.
- (d)* If I come to a word I don't understand, I look it up.
- (e)* I locate in the atlas every city and country mentioned.

The following special devices mentioned in Rickard's article indicate to what pains some pupils will go to master historical detail:

"I try to connect the names of men with places on the map.

"I write down all dates and events which happened at that time beside them.

"I use a rhyme for remembering dates, which I make up myself.

"I use sums of money for important dates. I think of myself as having that many dollars."

The reader of the foregoing methods has doubtless been impressed with the fact that very little of the work described is synthetic. It is primarily detailed and analytical, factual rather than conceptual. Pupils are strained to grasp the minutiae and, so far as the reports go, seem unaware of the need of achieving an organization in which only a few large truss-like facts, resting on firm piers of causes, span the centuries of human progress.

IV. SUPERVISING THE STUDYING OF HISTORY

During the study period, whatever type of organized study employed, the teacher's main task is to prevent the pupils from employing wasteful and unsuccessful methods. The routine of each period must be left to the teacher's judgment. Some days it will certainly be unnecessary to spend much time on detailed supervision, but, instead, considerable time on presenting, clearly and briefly, the meaning of some period or great historical occurrence, like the Thirty Years' War or the Feudal System, with these meanings illuminated by analogies in present-day circumstances. There can be no fixed time limit, no set rules, always to be observed. The truly successful teacher must be as independent in judgment as a blue-ribbon cook or a tailor de luxe.

1. **Rickard's Analysis.** Attempts are being made to analyze the mental processes involved in studying the various sub-

jects. One of the most successful of these analyses is that by Mr. Rickard. His analysis, which follows, deserves careful study.

MENTAL PROCESS INVOLVED IN THE STUDY OF HISTORY

A. ASSOCIATION :

1. Of dates with events.
2. Of the names of persons with events or *vice versa*.
3. Of events and names with places — names and location of same on maps.
4. By causal sequence—an event or events leading to an event or events.
5. By similarity — comparison and contrast.

B. ANALYSIS which involves :

1. The acquisition of the proper concept of new and technical terms around which concept future mental experience can be crystallized.
2. Discrimination as to the importance of events and their interrelations.
3. Resolution of a general concept into the elements which compose it. (Example, the term "Federalism" may be resolved into the social, political, and economic elements which characterize it as an institution.)

C. SYNTHESIS the reverse of analysis, involving on lower levels :

1. The telling of a story so as to tell all the important elements in order.
2. The grouping of sentences to develop a topical sentence.
3. The grouping of subtopics to develop a general topic *on somewhat higher levels*.
4. The grouping of characteristics into special tendencies.
5. The orderly arrangement of data, gathered from the text, collateral reading, or source material into these.

2. **The Dictionary Habit.** The pupils should know in the beginning of the course the meanings of the terms commonly found in history: "epoch," "age," "century," "period," "decade," "campaign," "movement" being such terms. There should be frequent recourse to dictionaries, or better still in the assignment, to save time, new terms should be defined either on the board or on mimeographed lists.

3. **Steps in the Cultivation of Imagination and Feeling.**

a. Dramatic performance once a month in conjunction with English, domestic science, and manual training departments, the former constructing the play and designing costumes, the latter building properties. If an art department is available, its coöperation in decorations and designing of scenes would be invaluable. Pageants are an excellent variation of dramatic performance.

b. Assigning in each big unit of instruction or topic historical characters to various pupils who will retain these characters during the respective units of instruction. Each pupil should read, as extensively as opportunity allows, supplementary material on his character.

c. Correlation of English, music (state, national, and school songs), and the special phases of modern life in its industrial, commercial, religious, educational, and social applications.

d. Employing local history; building tablets or monuments; having special days for unveiling these or doing so as part of Commencement Day.

e. A history museum, history scrapbooks, discriminate library work. Too much emphasis cannot be laid on the importance of a wise use of the library for general work and also for the special study of local history. Mr. W. Dawson

Johnston¹ refers to the stimulating method employed in Springfield, Mass., where the public library publishes an eight-page folder of pocket size containing questions that pertain to Springfield history and a list of books in which answers to the questions might be found. The list is called "Springfield in Early Days."

History clubs are not a new type of supplementary instruction, but in connection with high school work they can prove to be very effective. The high school is perhaps oversupplied with organizations, but there would be a distinct advantage in having the best pupils meet twice a month to study local history, including the history of the state. At such meetings there could be presented multigraphed copies of old newspaper articles, facsimiles of old documents, personalia of the pioneers, special programs covering exploration, settlement, development, and rebuilding, and also legends, ballads, and traditions of local and state history. The club meetings should be, of course, informal. Membership might be determined by election, members being selected from pupils attaining a certain standing in the formal class work. Social and refreshment features, occasional stereopticon lectures or plays dealing with local historical data would prove stimulating additions. Such clubs would be excellent means of fostering community activities, energizing the social center movement in rural districts. Parents, teachers, and pupils would here mingle. Local community pride might be aroused to emulation and progress by this means.

4. **Organization of Material.** It has already been stated that pupils have more difficulty in acquiring a big and definite conception of historical events than in memorizing particular

¹ *School and Society*, July 3, 1915.

facts. Most of the effort in the supervision of study will, therefore, be concerned with training pupils to think in history. Their first knowledge of data must be accurate; the causes and occasions of events must be clearly associated with these facts. This logical framework will include not simply the data of one nation, but international relations must be understood by careful analysis, comparison, and grouping of events. All this means organization of material, and organization involves clear, logical thinking.

a. In Chapter VII it was shown how the parallel type of outline is convenient for historical study, especially for the comparison of reigns. This outline form is serviceable also in the sketching of the rise of institutions, the simultaneous beginning and parallel development of historical reforms, such as the Renaissance in Italy and Germany and in England; the Reformation in Germany, France, and England; the American and the French Revolutions. The pupil must be able to trace the origin and to contrast the different lines of progress of the Renaissance, and must know how this movement affected the Reformation in various ways and eventually led to the American Revolution and in turn to the French struggle against the Bourbons. The details of the web of circumstances must be seen over against one another, and then all together as a large section in the span of historical progress. The parallel outline serves this purpose very well.

b. Dr. Wayland¹ cites numerous mnemonic devices that have proved helpful in the inevitable memory work in history. He refers especially to the *Alliterative or Euphonious Outline*, of which two illustrations are here given:

¹ Op. cit.

FOUR STAGES OF AMERICAN HISTORY

- I. Struggle for Life, 1492-1789
- II. Struggle of Factions, 1789-1820
- III. Struggle of Sections, 1820-1877
- IV. Struggle of Classes, 1877-

THREE STAGES OF AMERICAN HISTORY

- I. Construction, 1776-1789
- II. Destruction, 1860-1865
- III. Reconstruction, 1865-1877

c. A suggestive method of bringing out the foregoing details is used by Rickard.¹ His directions are as follows:

DIRECTIONS FOR STUDYING HISTORY

When you take up a book what do you see? The first thing you will notice is that there are certain lines in very heavy type. These were put in heavy type in order that your attention may be called to them. Sometimes there are lines in heavy type through the middle of the page, and then lines in the same type at the sides. This usually means that the author has wished to call your attention to certain subtopics which bear upon or re-enforce the general topic. You should find what the words of these heavy lines mean. If there are unfamiliar words, look them up in a dictionary. Try to change these lines into your own words; say them to yourself until you are sure you know the general topic, and the subtopics. Ask yourself in each case how these subtopics are related to the general topic outlined at the beginning of the chapter. In order

¹ The author is indebted for many suggestions sent to him by Mr. Rickard, who generously made available for this book several data on an investigation in the supervising of the study of history in the high school of Oakland City, Ind.

to do this one must proceed to the subject matter of the text. One will find there first of all indentations which indicate the beginning of a paragraph. If you will search carefully, you will find in each paragraph one sentence which is the key to the thought expressed in that paragraph. When you have found this key sentence underscore it or write it down in a brief memorandum. These memoranda in turn will be subtopics under the subtopics which were in heavy type. Strive constantly to see how the topical sentences are related to the subtopics and these in turn to the more general topics.

If the author uses unfamiliar words look them up; if he mentions places, find them on a map; if he mentions persons, turn to the back of the book. Find where the person has been mentioned before, and refresh your mind in regard to him, or consult additional reference. After doing this reread the statement made by the author and try making the statement in your own words. Try constantly to connect names and places. Write them in groups if possible, or write, for example, the English and French leaders in the Hundred Years' War in parallel columns. Think of men as stationed on a map or moving from place to place in campaigns. Get the picture with your eyes closed.

Most events in history have a cause or causes, or conditions leading to, or events leading to. Ask yourself constantly what the causes of a given event are. Set them down in one, two, three order. Say them to yourself until you know them, and see clearly their relation to the result produced.

Imagine yourself as a teacher and ask yourself questions; then find the answers.

As a rule only a few dates will be assigned you, but these should be associated with their proper events and learned as thoroughly as a multiplication table.

Don't be content with doing these things on one occasion, but with your book closed try to call up the important points, places, and persons, and their relation one to the others.

Have the will to learn. The brilliant boy who finds it more agreeable to bluff a lesson than to prepare it, soon becomes incapable to the point of dullness. The least brilliant of you, by careful methods of study, can become an effective and satisfactory student.

5. **Reviews and Summaries.** The chief value of reviews lies in the accompanying necessity of reorganizing the subject matter. Outlines each day contain the pupil's interpretation of the text with possibly material from other sources interwoven. The review embraces everything included in the particular unit of instruction. It is fundamentally important to have well-planned reviews at the close of each large topic studied in order to sum up and evaluate the various facts. For this reason reviews should be

a. *Selective not Exhaustive.* Details, unless of fundamental importance, should now be disregarded. What is needed is a clear and broad conception of this section of material. The pupil must have a perspective of the road traveled.

b. *New Views.* Reviews are not drill lessons; not simply a repetition of statements and facts studied day by day. Facts must now be viewed again from new angles, in the light of material that followed. This means that daily assignments will now be reset, so to speak, picked out of their little mold, and assembled with others into a big idea, a clear understanding of what particular events meant at the time. It ought to be evident that this is not the teacher's task alone; it is primarily the pupil's test of how he has learned history. If he can interpret this large topic, he will be prepared to take up what follows.

c. *Vitalized by Association with Some Present-day Truth or Problem.* In other words, the best way to clinch a review is by some specific application or by some method of expres-

sion that indicates the value, the worthwhileness of the review. The day of reviewing can be made a "Red Letter Lesson"—an unforgettable revelation of how history after all is a huge story of men and women with origins, natures, development, ideals, faults, like men and women of to-day. Various methods to make this possible have been suggested.

Superintendent E. E. Smith of South Richmond, Va., employs the following type of organization in the Bainbridge Junior High School:

LARGER PROBLEMS

Roosevelt and Jackson Compared and Contrasted. (See Bassett, *A Short History of the United States*, Chapter XL—"The Administrations of Roosevelt and Taft.")

Are we affected by the outcome of many of the events of this period?

METHOD OF STUDY OF THE PROBLEMS

Characteristics of the two men contrasted and compared:

In fighting spirit:

In actual warfare, one was the Hero of San Juan and the other the Hero of New Orleans.

In administrative affairs of the government:

The fight against the corporations — Roosevelt.

The fight for election after 1824 — Jackson.

The fight against fraud — Roosevelt.

The fight for the establishment of Democratic principles.

Opposition to American System and National Bank — Jackson.

In tendency to use irregular methods:

Both were extremely democratic in their method of appealing to the masses.

In choice of advisers — Roosevelt's "Tennis Cabinet" and Jackson's "Kitchen Cabinet."

The "Big Stick" wielded when nothing else would avail.

Witness Roosevelt's taking the Canal Zone, putting Taft in office, and dictating of policies to his party.

Witness Jackson's hanging the Englishman in Florida, management of the Creek Indian Affair, introduction of the spoils system, method of doing away with the National Bank, and putting Van Buren into the presidency.

In fearlessness:

Roosevelt settles the coal strike in spite of its effect on his or his party's ambition.

Roosevelt probes the postal scandal.

Roosevelt inaugurates strict civil service.

Jackson handles nullification in South Carolina in spite of his personal view in regard to tariff.

The outcome of their influence on their respective times:

Roosevelt caused the beginning of an era of investigation by the government, a revolution in his party, and defeat of Taft.

Jackson caused a temporary financial disarrangement in Van Buren's time, an organized treasury, and the defeat of Van Buren. The idea of popular government gained a stronger footing in the popular mind.

BIBLIOGRAPHY

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Bassett, *A Short History of the United States*, Chapter XL.

Periodicals of 1912.

d. Methods of Reviewing.

(1) Biographical — Pupils are assigned important names in the field of history just covered. Special reports are made on these, either by individuals or by groups.

(2) Contests such as history, spelling, officer, geographical, map-drawing, the class being divided into two sides, with leaders, much as in the old-time spelling bee.¹

(3) Topical outlines, newspaper squibs or articles, orations, dramatic performance or pageant.

(4) Review questions by teacher or by pupil or by both.

6. Suggested Directions to Pupils for the Study of History.

It would be helpful if history teachers prepared a chart like the following directions by Rickard and hung it in clear view of the class.

DIRECTIONS TO PUPILS FOR THE STUDY OF HISTORY

1. Only a few of the most important dates will be assigned, but these should be connected with their proper event and learned as thoroughly as a multiplication table.

2. Write out and pronounce all proper names. Try to connect each name with some place and some event.

3. Use map, dictionary, and additional reference for every location and word you are not sure of.

4. Try to find the cause or causes of each event.

5. In comparison and contrast set down likenesses and differences point by point in parallel columns.

6. Ask yourself continually what the most important events in your lesson are and why.

7. Tell the story of your lesson to yourself in detail and in order. Be sure to use any term you have recently learned the meaning of.

8. After reading each paragraph ask yourself, "How is this paragraph related to the chapter heading?"

9. Jot down a brief memorandum of the points of each lesson which you regard as especially important.

¹ Wayland has an excellent list of suggestions on conducting reviews.

V. COMMON DIFFICULTIES AND FAULTS AMONG THE PUPILS STUDYING HISTORY

The study supervisor, like a good locomotive engineer, must know the track, its rise, fall, curves, weaknesses, etc. There is a variety of deficiencies among pupils, a knowledge of which would help the teacher to make more effective assignments. These difficulties and faults can be listed briefly as follows:

1. Wrong inferences.
2. Confused knowledge.
3. Inaccurate statements.
4. Misspelling of names with consequent confusion.
5. Paucity of language.
6. Loose generalities.
7. Blunt historical sense.
8. Memorizing of too many details.
9. Uncertain conception of relationships.
10. Inability to weigh or evaluate material.
11. Failure to evolve a brief and clear scheme of organization either by outline or summaries.
12. Too much copying in notebooks.
13. Too little correlation with other subjects.
14. A narrow view or a one-sided point of view. History should be studied from several angles, industrial, educational, etc., as well as political.

VI. THE TECHNIC OF A SUPERVISED STUDY PERIOD IN HISTORY

In order to illustrate some of the foregoing material and at the same time summarize the various points in this chapter the following plan, evolved by Dr. J. L. Merriam of the

University of Missouri, is presented as a most excellent procedure.

University High School — ANCIENT HISTORY — 8 O'clock

Outline of Lesson Plan — Jan. 30, 1913

Text in use: Westerman, *Story of Ancient Nations*

Prepared by Eleanor Wilkes

General problem for this period: To see how Greece is at last united in an offensive policy against Persia by Macedon — Paragraphs 238-245.

1. Rise of Macedon under Philip.

Text, paragraphs 238-240.

- { Fling — Source Book — pp. 286-294.
- { Goodspeed — p. 191, etc.
- { Bury — pp. 555-561.

2. Thoughts of the times on the proposed unity under Macedon.

Text, paragraphs 240-243.

- { Goodspeed — p. 191, etc.
- { Bury, pp. 704-705, 716, 744, 583-585, etc.

3. Macedon unites Greece for offensive *vs.* Persia.

Text, paragraphs 243-245.

- { Fling — pp. 286-294.
- { Bury.
- { Oman, etc.

I. RECITATION.

A. On class study of previous day.

Rise of Macedon under Philip.

1. Compare the old Macedon with:

a. Athens —

- { Athens civilized — shown in government, culture.
- { Macedon barbarian — shown in government, culture.

b. Sparta —

- { Sparta civilized.
- { Macedon barbarian — government was much the same, but Sparta's was more organized.

Illustration in America — Compare old Macedon with American Indians.

2. Give reasons why Macedon had not developed before :
 - a. Macedon separated from Oriental civilization.
 - b. Separated from Greece by mountains.
 - c. Macedon had a few good seaports.
 - d. Macedon had no good leader.
3. Explain why Macedon grew in the time of Philip :
 - a. Increased means of communication with other peoples since contact with Persia.
 - b. As a consequence, Greek and Oriental culture filtered into Macedon.
 - c. Greece weakened by wars.
 - d. Leadership of Philip.
4. Explain Philip's policies in organizing his kingdom :
 - a. To organize scattered tribes into a nation.
 - b. To form a standing army.
 - c. To gain an outlet to Ægean Sea.
 - d. Ultimately to unite Greece with Macedon for a war with Persia.

B. Questions (on the advanced reading which was assigned the previous day. These are to be factual questions. Books still closed).

1. What two parties appeared in Athens on account of Philip's policy?
2. Who represented these parties?
3. What means did these men use to spread their ideas?
4. Tell something of the life of (a) Demosthenes; (b) Isocrates.

II. CLASS STUDY. (Books open.)

Thoughts of the time on the proposed units under Macedon.

To show the effect of contemporary theories upon the unity of Greece.

1. Demosthenes, his ideals and his party :
 - a. Explain Demosthenes' ideas concerning the aggressive policies of Philip.

- b. Why did he take the negative attitude against these policies?
 - (1) He feared for the independence of Athens and Greece as a whole.
 - (2) Could not see that Greece was incapable of uniting without foreign help, etc.
- c. What was the effect of Demosthenes' views on Athens?

Strong party developed *vs.* Philip.
- 2. Isocrates, his ideals and his party :
 - a. Explain the judgment of Isocrates concerning Philip's aggressive policy.
 - b. Why did he want the leadership of Philip in Greece?
 - (1) He saw that Greece was weakened.
 - (2) He saw that there was no leader in Greece like Philip.
 - (3) Philip alone could give Greece a national enterprise.
 - (4) This was the only hope of an effective alliance against Persia.
 - c. Compare patriotism of Demosthenes with that of Isocrates.
 - { Demosthenes loyal to Athens.
 - { Isocrates loyal to Greece as a whole.
 - d. Let us see what effect the beliefs of Isocrates had at Athens.

(A strong Macedonian party developed in Greece.)
 - e. Let us see how the new education at Athens effected the spread of these respective beliefs.

(Oratory, rhetoric, etc.)

III. ASSIGNMENT.

- 1. On class study :
 - a. Give three reasons why one could say that Demosthenes stood for the Old Greek ideals.
 - b. Give three reasons why one could say that Isocrates stood for the New Greek ideals.

- c. Discuss why it was thought that Macedon should be the leader in the wars *vs.* Persia.

2. Advanced Reading:

Text, paragraphs 243-245. (See also reference at first of this section.)

Purpose of advanced reading:

- To show : 1. How Greece at last united under Macedon.
2. How the policy now changed from the defensive to the offensive.

CHAPTER XI

SUPERVISING THE STUDY OF CIVICS

I. THE PRESENT SIGNIFICANCE OF THE SUBJECT

THE criticism quite generally expressed against history as being uninteresting and useless cannot be directed against the studying of civics, for here we are concerned with the immediate surroundings of life, community conditions that favor or harm personal growth in a variety of ways. There ought not to be any difficulty in securing proper motivation in this subject. Citizenship, social welfare, intimate knowledge of local conditions, good roads, etc., are live topics. Civics, perhaps more than any other subject except the purely manual, should spend less time upon textbook and reading matter and more upon excursions, tours of observation, and purposeful visits to the several agencies of local community existence. The real value of civics as a school subject lies in first-hand knowledge of how group life is organized, not merely in the immediate home environment of the pupil but elsewhere as well, and of how life at home is intimately tied up with life away from home. It is a study of the purpose, the nature, the methods, the ultimate possibilities or ideals of citizenship as a practical and forceful element in human progress.

II. HOW TO SECURE INTEREST IN CIVICS

Interesting in itself, just as history is, civics can become dry and seem useless unless certain factors or elements of the subject are especially made appealing. In a recent bulletin¹ it is suggested that the following topics form the units of instruction in civics: (1) health; (2) protection of life and property; (3) recreation; (4) education; (5) civic beauty; (6) wealth; (7) communication; (8) transportation; (9) migration; (10) charities; (11) correction. In addition to the foregoing the organization and financing of governmental and of voluntary agencies are included.

It will be noted that each one of these topics is alive and possesses interest for the average wide-awake young person in the high school. There is, then, no need of struggling to form an interest, already existing; but there is great need of directing it into worthwhile effort. The pupil should at the very outset have a perspective, a panorama, a preview of the course. He should glimpse on the first day the entrancing points of interest offered in this subject. Moreover, it should be impressed upon the pupils at the beginning of the study that civics is peculiarly a subject that appeals to the individual, to his responsibility, his resourcefulness, his development, his enrollment, and his coöperation in the forces of civic improvement.

III. METHODS OF STUDYING CIVICS

The study hall of civics is the entire community. No one can derive any great amount of benefit from the mere reading

¹ *The Teaching of Community Civics*, U. S. Bureau of Education Bulletin, 1915, No. 23, Whole No. 650, price 10 ¢, Department of Interior, Washington, D.C.

of a textbook on civics. At best it deals only with principles, but, primarily, civics is a laboratory study, a study of life conditions as they are, not mere copies or pictures of life's needs and problems.

1. **Group Assignments.** The topics are so many and the time so short that it will be necessary to assign small groups of three or four pupils special problems for investigation and report. A partial list of such topics is here given:

a. *Better Roads.*

b. *New Viaducts, Culverts, Bridges.*

c. *Playgrounds.*

d. *Athletics*, including tennis courts, basket ball, baseball, cross-country running.

e. *Advertisements.* A study of signboards in town, along country roads, on vacant and occupied buildings, windows, sidewalks, posts, poles, trees. The character of these, samples or pictures of them — all this leading to the recommendation of a public advertising center, properly arranged and maintained.

f. *Amusements.* Study of the moving-picture shows, classes of subjects shown, number attending, amount spent, who attend, etc., with recommendations for improved lighting, better screens, better lanterns, better ventilation, more beautiful exterior, and a higher and more varied selection of films. Similar study of the theater, the circus, the county fair.

g. *Church Life.* Membership of churches, how the churches are governed locally and at large, training of minister, list of subjects and texts he uses, what is done at prayer meetings, the church music, the appearance of the church (interior and exterior), how strangers are treated, does the church pay its

minister a living salary, does it pay the salary on time, what organizations are maintained by the churches, what social service do they render, etc., with recommendations for changes, improvement, coöperation.

h. Newspaper. Names of those subscribed for and read in the community or county; kind of articles appearing; kind of news, advertisements, phases of life included, and amount of space given to the various kinds of each; how papers are delivered, — on time, with good wrappers, deposited by the door or thrown in the yard where they are easily lost; coöperation of editor with civic improvement; the political policy of the paper, who owns it, circulation, how often quoted in other papers; is editor a public-spirited, educated person, etc.

i. Club Life of the Community. Names of clubs, who belong, purpose of clubs, when do they meet; what good do they accomplish; amount of money spent for dues, socials, charities, etc.; officers — who they are in society, in business, in church, etc. A list of these clubs, with relevant material published in pamphlet form or in the newspaper, would be an eye opener to some communities.

j. Living Expenses. Food, clothing, light, heat, building, taxes, value of real estate, number of property owners, number of renters; slum or alley or tenement sections; number of automobiles owned, live stock, etc. Reports could be obtained from local dealers. The aggregate reports would show how much it costs the town to live, — a most vital fact in civics.

k. Educational Provisions. Schools, public and private, with running expenses itemized; boy scouts, camp-fire girl organizations with membership and other details; reading

circles, lectures, library facilities, number of books possessed, magazines taken, etc. These reports would show the intellectual standing of the community.

l. Public and Private Health. Kinds of diseases treated, number of cases on physicians' books, amount spent on ill-health, local sanitariums if any, patients' probable causes of ill-health; storage, markets, dairies, sewerage.

m. Utilities. Light, water, travel, including amount spent on cars, trains, boats, bus or jitney, livery.

n. Public Morals. Number of police, arrests, number and causes, jail conditions, court conditions, kinds of cases on docket.

The foregoing indicate the immense possibilities of how civics may be kept alive and how the subject can be studied with maximum effectiveness. Teachers should possess the bulletin referred to, for a detailed statement of the wide variety of topics to be investigated.

Pupils undertaking these assignments must have the co-operation of every citizen in the community. It is right and proper that these growing boys and girls should have first-hand knowledge of some of the life conditions in their community. When their time comes to vote and to hold office, their worth to society will be invaluable if back of patriotism there is more than sentiment, — intelligent criticism based on facts. Mere theories and principles will not suffice. Facts are stubborn and explosive or compelling in quieter ways, but careful study of such civic facts is imperative in a sane and intelligent democracy.

Reports, presented and discussed, with evidence or exhibits will occupy the bulk of the course. Supplementary reading can be used for comparisons and interpretations. The best

reports should be published in the local paper or in the high school magazine.

2. **Current Topics.** A most helpful variety of reports takes the form of Current Topics. The following method employed in the Bainbridge Junior High School of Richmond, Va., is an illustration of how civic information can be developed. Superintendent Smith submits the following report of the plan:

a. Selecting the Time. At least one day in each week should be devoted to the consideration of current topics of social interest. Friday is often selected, since a résumé of the week's happenings can be talked about, and because any publications containing current topics reach people on or about Thursday. The important thing, however, is to select a time and see to it that the pupils come prepared with something to say. Simply to say something is not the idea of the work.

One period in history or civics can be devoted to this topic. If approval is given and more time is required, a portion of some other period might be added with much profit.

b. Preparation by the Pupils. Pupils should bring to the class (1) some current periodical, or (2) some recent newspaper, or (3) some clipping or clippings that they may have saved.

c. Motive. The material presented should be of interest to the entire class. It should have value as instruction and a distinct social color. Pupils should decide on the merits of what is being presented, although it is sometimes necessary for the teacher to do so. As an example of the above, one pupil in the seventh grade presented the following item: "I see that X— has been the victim of a fortune teller. It reads 'Citizen of Richmond Fleeced; desires his money back.'" An account of the local unpleasantness followed. While many knew the man referred to, one of the pupils

arose and said kindly: "This is of little interest to us," and the matter was dropped.

We are all agreed that children should be encouraged to read current topics and taught how to read them. But simply to read and talk about items of interest is not enough. If a class record is kept, it is of immense value. A class scrapbook containing an account of morning exercise programs, postals and pictures of historical, geographical, and other interests, many items of class interest, etc., which, in a concrete way, supplement the curriculum and aid social activities. Even jokes can be pasted to advantage. News items which serve some special needs of the class or which, as a record, are valuable, should be kept; and children, thus collecting by groups, can easily form the oft-neglected habit of "clipping." Or a record alone of the current events class might be kept.

Other motives are: approval by fellow members, gaining ability to get opinions and facts quickly and to organize, carrying such news to those who do not know it or have no way of finding out, ability to participate in the conversations of parents, friends *et als*. Others might be added. The latter are individual motives, while the former may be called group or social motives.

NOTE. The collecting instinct is very strong in children and the suggestion offered is entirely psychological. Practice proves it.

d. Preparation by the Teacher. For the teacher to actually prepare for the material to be presented by the class by reading a great deal or most of the periodicals and papers, is impossible, for she does not know from what sources the material will come. But it is desirable and necessary that she "keep up" with current topics by reading some good magazine or magazines and at least one good newspaper regularly. In fact, to organize what she does read, to select certain articles for supplementing thought at any time during the school day in any and various subjects in order to assist in directing the thought of the current events period, is very desirable.

The better the knowledge of economic principles, civil government, and allied organized knowledge, the better her qualifications, other things being equal. To know the make-up of a newspaper — what kind and what body of knowledge it contains — gives her a decided tool and a very necessary one.

e. Desired Aims in Teaching It. The purposes of teaching it are as follows: (1) to get pupils in the habit of reading this kind of literature; (2) to show them how to read it by having them select material of social value, and the make-up of the paper, etc.; (3) to have them organize the material selected for purposes of record, information, and the training secured in this process; (4) to give them standards for judging the inferiority or superiority of things sold to the public to read.

f. Material. The sources from which children contribute have been found to be: newspapers, magazines, health bulletins, theater programs, almanacs, novels, etc. A good map of the world should be before the entire class.

g. Standards for Judging the Value of Contributions. Contributions offered to the class by individuals of it should be of interest to many, if not all. The material should be authentic, and the source quoted by pupils.

h. Delivery of Contributions. Contributions should be given in a whole-hearted way. Pupils should address the class, not the teacher. They should present, at the very beginning, the gist of what they desire to say, why they wish to tell or read it, and the source from which the information comes. For example, pupil A arises, faces the class, and says: "My attention was directed to (or I saw in) the *Times* of Thursday, December 2, 1914, an interesting article (thing, statement, etc.). It tells us something about cotton production." He continues: "This article tells us that a machine has been invented, etc. If I may, I should like to read a short description of it." Approval is given by one or more members. He proceeds to read.

The pupils' replies should be as broad as the subject, making due

allowance for maturity. For pupils to make a five minute talk or a three or two minute talk should become quite common. This fluency of discussion is rather conspicuous now because of its scarcity.

i. How the Contributions are Organized. Contributions and readings can be organized to great advantage by having the topics touched upon grouped on the blackboard. For instance, the following outline is a partial organization of the contributions of a class, placed upon the blackboard, the teacher having directed it:

CURRENT TOPICS

1. War News.

1. Four Theaters of War — (Current Events)
2. What was news fifty years ago (1864) — (Local newspaper)?

The two compared.

3. Government Investigations.

2. Inventions and Discoveries.

1. War helps a certain kind of invention.
2. How much of the world is not discovered?

3. Health and Sanitation.

1. State laws which investigate foot disease in cattle.
2. Panama Canal completed. Tolls received (related to health on account of early difficulties in building it).

4. Local News.

1. Death rate in . . . (chart).
2. Our city government . . . (chart).

5. General News Here and There.

(Items not listed, but enjoyed.)

j. Re-reading with a Specific Purpose. When the separate contributions have been received and organized, there is offered an opportunity for group rivalry. Suppose that five topics have been presented. Give to groups in the class (five groups in this case) one of the organized captions, and ask them to look quickly

over their newspaper or whatever they have (textbooks and reference books, etc., can sometimes play a valuable part when referred to), and see if they can add anything to what has already been said. Using the illustration above, one group would have "War News," another "Inventions and Discoveries," another "Health and Sanitation," still another "Local News," and finally "General News Here and There." "Good Jokes" sometimes adds humor and entertainment. In this case, it is not necessary to group; — all are very anxious to contribute!

k. Important Points.

1. Prepare for the period.
2. Give a short while for a re-reading of their papers.
3. Encourage voluntary offerings.
4. Organize, in the most suitable way, the subjects touched upon. Provide for recording.

Standard: Is the contribution of social value?

5. Reassign subjects to certain groups.
6. Call for volunteers for an extended presentation of the most important and interesting things. Provide for recording.

It should be understood that the citizens of the community are welcome at all meetings of the class in civics. For this reason it would be wise to conduct this class in the largest room of the school and at an hour convenient for everybody. Additional reports could be presented at the Parent-Teacher League which should be organized as a special branch of the course in civics. This would enhance adult interest and coöperation.

If reports are brief, two or three might be read at a meeting, providing they are related.

Pupils should be assigned reports at the beginning of the term with date of reading the report, and a list of these assignments posted in a conspicuous place so that all the pupils

of the school can read it. It would be well also to publish the schedule in the local paper.

Whenever possible, pupils should be expected to make large charts of their results or conclusions for easy perusal by audiences. These charts should then be preserved in the school museum.

In a small school, or even in a large one, it probably would be impossible to cover all the subjects in the course. The remainder could be taken up in subsequent terms. Whatever is undertaken should be done as thoroughly as possible, otherwise the reports would have little or no value.

SUMMARY

The outcome of detailed observation of civic life, not only local but state and national as well, should be to foster friendliness, coöperation, team work, and loyalty for the building up of respectable centers of life. The high school, under the dominance of these motives, becomes in a very real sense the people's school, the dynamic of a saner and more beautiful manner of living, the inspiration of effort to advance beyond the best of the past or present. Under such conditions schools would eventually find financial support more generous, and teachers would feel that their standing in the welfare of the community was regarded as all important in a more vital, active, and rewardable form.

CHAPTER XII

SUPERVISING THE STUDY OF MATHEMATICS

I. THE PROBLEM OF REORGANIZATION

THE author served as study coach for a brief period in a high school taught by a superior corps of teachers and in many respects controlled by a model organization. Conditions among the pupils seemed normal. There was doubtless as much interest in studying as one finds in the average American high school. The number of promotions were normal so far as present curves of promotions justify this conclusion. Nevertheless, more of the pupils who came to the study coach had trouble with mathematics than with any other subject. This distribution was not at all affected by sex; both boys and girls in equal number had difficulties in algebra and geometry.

No one acquainted with high school pupils will deny that much of the fear and trembling in working out an education is caused by mathematics. Still required subjects in practically all high schools (due largely to the dominance of entrance requirements to college), there is little or no opportunity to avoid the terrors of algebra and geometry. There are, to be sure, wholesome efforts being made to effect some sort of revision. Former Commissioner David Snedden of Massachusetts, for example, strongly advocates inquiry into why girls

in high school should be compelled to study algebra or why girls seeking entrance into college must present a certain number of credits in mathematics. He believes also that young men who aim to enter medicine, law, journalism, or theology do not need algebra. Other critics advocate a reduction of the amount of mathematics required in high school, and some universities have made notable revisions in mathematical entrance requirements. One feels that in these days of reorganization throughout secondary education something definite and worthwhile will result.

It is easy enough to throw the whole blame for the trouble in mathematics upon the teachers. There is no need here to stress in any detail what teachers themselves know all too well, that many of them lack scholastic and teaching experience adequate to relieving the situation. With some knowledge of algebra or geometry and a few courses in methods, any teacher, it would seem, ought to be able to teach mathematics, especially with a good textbook and a key! Why, then, do pupils have so much trouble with the subject? Evidently because they are either stupid in mathematics or because "it is the most difficult subject in the school." A star performer in algebra and geometry is looked upon by the other pupils as a marvel or perhaps a freak — certainly not ordinarily human.

Tradition is a tenacious thing. All of us tend to believe that mathematical ability is extraordinary and is the mark of a superlatively acute mentality. The mischief in this belief lies in letting it affect one's attitude toward the pupils, — some can get it, help them; some cannot get it, be merciful and let them through, anyway. The latter are enrolled in the traditional "born shorts"; the others tread fine floor or mosaic corridors with the strides of genius! "Ah me," sigh the gal-

lery gods, "I wish I was as smart as John or Sue!" Or perhaps the host with lighter tinted gray matter sneer at the book-wormish few who don't have spine enough to be "like other folks." And so mathematics becomes a badge of genius, or the ball and chain of curriculum slaves.

II. THE VALUE OF MATHEMATICS

Out of the mass of arguments for and against this subject, it is fair to conclude that the studying of mathematics has certain distinct benefits. These may be summarized as follows:

1. Inasmuch as no one can foresee what life's changes will require of each of us in the way of skill, information, adaptability, etc., it is important that every progressive citizen should know the fundamentals of mathematics.

2. Algebra is a short cut of arithmetic and, therefore, of practical value, especially when correlated with arithmetic and studied as a phase of the science of numbers.

3. Geometry finds its truest claim in stimulating pupils to observe the definite procedure of reasoning. It does require careful speaking at a time when language tends to be extravagant and inexact. This need not mean that there is any transfer from exact speaking in geometry to exactness in describing a thunderstorm, or translating; but it does mean that pupils are introduced in a controlled way to the importance of basing conclusions on demonstration. Geometry has little value outside of its "originals." Its training in independent thinking is one effective means of swinging the pupil away from mere memory work. As long as the doctrine of formal discipline is oscillating between proof and disproof, it may be wise for those of us who are not "born long" in mathematics to agree that

while educators in the past were not infallible neither were they wholly wrong. The problem of geometry is not fundamentally one of total or even partial elimination from the program of studies, but rather one of painstakingly directing each pupil so that his type of reasoning may appear to him successful. This means abandoning exclusive textbook worship and launching each pupil on the more technical processes of thinking.

4. A knowledge of mathematics is essential to the study of the sciences and to the applications of these in all forms of engineering, building construction, industrial chemistry, and statistical study of social behavior as organized in sociology, economics, political science, and education where only too frequently men jump at wild conclusions without having facts or knowing how to interpret the facts they do possess.

5. If mathematics is to awaken interest among high school pupils, it must be differentiated according to curriculum ends. This means that in high school each group of studies (curriculum) leading to a particular type of career, such as engineering, business, professions, home-making, etc., should stress the selection of topics and methods of study that logically serve as a specific prerequisite to advanced studies in mathematics. In other words, the proposition that pupils in high school will study mathematics more willingly and effectively if conscious of the practical value (which may include the cultural) of the type of mathematics they are dealing with seems defensible and, if properly investigated, probably would be adequately supported by evidence. Vocational mathematics — this term including cultural as representing effective citizenship — rather than disciplinary mathematics, it seems to the author, would help to reduce the antipathy toward the subject.

Excellent illustrations of this discriminate curriculum thinking are found in Pratt Institute, Brooklyn, N.Y.; Lewis Institute, Chicago; Lincoln High School, Nebraska. In the first, mathematics of two year courses includes essentials of algebra, geometry, trigonometry, analytics, and calculus. In algebra the pupils begin by applying in shop work the principles of mathematics common to the work in hand. Shop and class-room are really laboratory and recitation rooms. Similar methods are employed in the Lewis Institute. In Lincoln, Nebraska, algebra, geometry, and trigonometry constitute a single unit in mathematics. The pupils are constantly dealing with this interrelationship. Preceding work in mathematics there is an inspirational course in general science. The study of mathematics begins in the second half of the first year. Pupils who have shown no aptitude at all for the subject are not expected to enter the course, but this very freedom serves to stimulate industry, and many do enter the courses in mathematics.

6. So far as the girls are concerned, there is no reason for excusing them from either algebra or geometry, simply because they are unable to learn these subjects. In the chapter on "Individual Differences" it is shown that girls and boys are about equally proficient in mathematics. Woman to-day competes with man in practically all walks of life. She can become a reliable engineer and a most accurate astronomer. A differentiation on the basis of sex alone is hardly justifiable. The vocational or curriculum distinction referred to under 5 applies with equal force to girls. Doubtless there should be a minimum of mathematics in domestic science courses, but girls electing other curriculums should conform to the requirements of these groups.

III. THE PILOT TEACHER OF MATHEMATICS

Wherever tried, it has been found that supervised study in mathematics results in greater efficiency and in reduced retardation. The pilot teacher is all essential. Normal schools and similar training agencies must evolve methods of study supervision as well as methods of teaching; in fact, may we not go even further and say that all methods of teaching must become methods of teaching to study? Unless the pupil learns how to learn, he will go through life either as the victim of an unreliable memory or as the half-expert delayed and confused by teachers who could imitate but not initiate or originate. Supervised study in mathematics depends upon teachers who know how to study algebra and geometry, and who are able to recognize the first feeble efforts of pupils to prove things in a way different from the textbook and perhaps more effectively than its author.

IV. SUPERVISING THE STUDY OF MATHEMATICS

I. The Assignment. Considerable space has already been devoted to this topic in Chapter VI. In addition to what is suggested there, the assignment should be brief. It is much more important for pupils to work a few problems correctly than to cover several in a less thorough manner. What is needed is quality and not bulk in the study of mathematics. The time of the assignment must be left to the teacher's judgment, but whenever given, it should be clear and so definite that every member of the class has a fair chance at an intelligent start.

The assignment should be written in an assignment book or on an inserted page. Pupils should not be permitted to write

assignments on scraps of paper or carelessly in the text. One of the requirements in all courses of mathematics should be orderliness, neatness, precision. Some teachers advocate that assignments should be simply remembered, not recorded. This, however, is a doubtful procedure.

2. **Class Management in Mathematics.** The usual practice of having the whole class go to the blackboard is indiscriminate and useless. A better procedure observes the following points:

a. Algebra problems should be solved on paper of uniform size, color, texture, preferably in special loose-leaf notebooks. The problems in the notebook should be notated in agreement with page and number in the text. The aim should be to evolve a pupil's key to the text. Problems should be classified as in the text. The appearance, organization, accuracy, and even originality evident in these books should enter into the class mark.

b. The various steps in solving a problem should be numbered and so referred to in class discussions.

c. The papers should be graded rapidly in class by the teacher reading correct solutions and the pupils correcting their own or one another's papers.

d. Special difficulties may now be selected, and pupils having had special difficulties should be sent to the board or grouped in a corner for individual instruction. The remainder of the class according to groups (see Chapter VI) will be assigned additional problems or given assignments in practical applications, suggested by themselves or by the teacher. If the pupils can be stimulated to contribute original problems, the teacher will have almost reached an ideal supervised study period.

An example of this grouping is given by Parker.¹

After the teacher had got the class started as a single group on the first book, and some of the fundamental ideas of geometric procedure had been established, the sections were organized on the basis of the students' records in previous work as well as their ability as shown in the new work. Each section was then assigned a corner of the room as its regular recitation place, and henceforth each section proceeded at its own pace through the geometry. The first section commonly completed the plane and solid parts of Wentworth's Geometry in one year. The medium section usually completed the plane geometry only (that is, five books), as is commonly done by classes using the simultaneous method. The slow section usually got through about four books, but most of its members managed to do this much with a fair degree of thoroughness, instead of being dragged over the whole five books in an uncomprehending way, as commonly occurs when the ordinary class method is used.

e. Train the pupils to read the textbook. Much difficulty in mathematics is due to slovenly reading or misunderstanding of the words themselves.

f. Note the errors or difficulties common in mathematics. The author has found the following list fairly common in five high schools. The types of difficulty are arranged in the order of their greatest frequency.

(1) Wrong signs.

(2) Mistakes in elementary processes of addition, subtraction, etc.

(3) Misreading of problems, such as omitting words or adding words.

(4) Inability to visualize the conditions or "stage-setting" of the problem.

¹ *Op. cit.*, p. 382.

(5) Impatience ; if the answer is not correct the first time, the pupil becomes discouraged.

(6) Too many problems to solve. Pupil either tries to work all of them with consequent carelessness in many instances, or selects the easiest and ignores the others because they seem too hard.

(7) Inability to transfer the processes of a model example to other problems. Some pupils understood the model solution but could not construct independently equations or steps in assigned problems. In other words, a perfectly clear explanation does not mean that pupils will find the work easy. *They need supervision in the economical transfer of explanation to their own applications.*

(8) Carelessness in copying figures or terms.

(9) Lack of orderliness on the "work sheet" results in confusion and mistakes in finding the steps in their solution. Hence need of system, notation, supervision of study.

(10) Hasty work resulting in the neglect of terms or the omission of x after the coefficient.

(11) Groups in working together depended on the bright ones who gave the correct methods and answers. Dishonesty, the author has found, is more common in mathematics than in any other subject, not excepting English composition, which is immoral enough.

(12) In geometry, memorizing of the demonstrations.

(13) Failure to understand the meaning of space relations in geometry and the consequent inability to make proper comparisons.

In addition to the foregoing discovered by the author, Judd ¹ cites other errors :

(1) Failure to keep in mind a long series of principles necessary to guide in manipulating the signs of different quantities ; for example, forgetting that a negative sign before a parenthesis works certain changes in the quantity within the parenthesis ;

¹ Op. cit., p. 120.

and losing sight of the effect produced upon signs by transposition from one side of the equation to the other.

(2) Failure to see the various familiar combinations which make it possible to get rid of undesirable quantities on both sides of the equation. Pupils forget that the management of the two sides of an equation or of the two members of a fractional expression calls for a like treatment of both of the elements in the operation.

(3) Failures to try experiments in rearrangement of quantities.

(4) Seeking to economize by carrying on processes mentally when the more deliberate written statement of the same problem showed that they knew the principle of procedure.

Judd calls attention also to the principal difficulties that pupils meet with in studying mathematics. Failure to distinguish between knowledge of space and logical processes of demonstration; inability to pass from logical demonstration to spatial fact; lack of understanding or knowing the reason for methods used; guessing answers; vagueness; inadequate perception and preparation.

The foregoing errors and difficulties emphasize the need of having teachers who can provide conditions favorable to concentration and who can devise interesting methods of drill so that fundamental rules become habitized. The suggestions already made, aiming at motivation through an analysis of the practical value of mathematics, may lend interest to the study. Charted directions, such as the following employed in the Bainbridge Junior High School of Richmond, Va., hanging in conspicuous parts of the room are very helpful.

PERCENTAGE

1. Read your problem until you understand it: six times if necessary.

2. State exactly what you want to find: base, rate per cent, or percentage.
3. Put down on paper each step in your solution.
4. Represent the base by "X": for a per cent more add to "X" the rate per cent: for a per cent less subtract from "X" the rate per cent.
5. Prove your result by working backward.
6. Remember:

Percentage = Base times the rate.

$$\text{Base} = \frac{\text{Percentage}}{\text{Rate}}.$$

$$\text{Rate} = \frac{\text{Percentage}}{\text{Base}}.$$

3. The Method of Teaching must be Symptomatic. An obvious conclusion from the foregoing discussion is that the teacher and the method exist for the pupil and not the pupil for either or both of the former. It is well enough to know the principles of teaching and to be familiar with the history and manuals of methods, but the conscientious and scientifically trained teacher knows that methods are like cures, — they must suit the individual cases. In other words, teachers must know what is wrong and why the wrong exists and then apply the remedy.

4. Reviews and Examinations should test Ability to think and to apply Mathematical Knowledge. The real test is not ability to repeat definitions and rules or to work equations and prove stated theorems. The test here, as in other subjects, is one of independent application, not necessarily to a practical problem (although this is always preferable), but to any original problem. The following Cumulative Examination in Mathematics by Mr. Harrison E. Webb of Central Commercial

and Manual Training High School, Newark, N.J., illustrates the contents of such examinations :¹

SUGGESTED QUESTIONS FOR CUMULATIVE EXAMINATION PAPERS

ALGEBRA THROUGH PROGRESSIONS

1. Show that a number is divisible by three if the sum of its digits is divisible by three.

2. Given

$$k = \frac{l_1 - l_0}{l_0(t_1 - t_0)}.$$

Solve for l_0 .

Find l_0 when $l_1 = 39.27$, $t_1 = 99.6$, $t_0 = 0.4$, $k = .000011$.

3. Find by a short method the value of each of the following:

(a) $(38\frac{3}{4})^2 - (17\frac{1}{4})^2$.

(b) $\sqrt{363} - 3\sqrt{\frac{1}{3}} - 5\sqrt[4]{9}$.

(c) $\sqrt{h(2r + h)}$, where $r = 4000$, $h = \frac{1}{10}$.

(Obtain results correct to the second decimal place.)

4. Derive a general formula for obtaining the principal which will amount to a given sum at a given rate in a given time, at simple interest. And find the principal when the time is sixty-four days, the rate 4 per cent, and the amount \$1540.

5. Find the dimensions, the volume, and the diagonal of a rectangular solid if three faces about one corner have areas of 108 sq. ft., 264 sq. ft., and 198 sq. ft. respectively.

6. If $y = a + \frac{b}{c + x}$, find a , b , and c , if $y = 41$ when $x = 6$,

$y = 31.91$ when $x = 2.1$, and $y = 26.45$ when $x = 5.4$.

7. A man pays an annual premium of \$164.37 for 20 years on an endowment life insurance policy. What should be his credit

¹ *School Review*, November, 1913.

with the insurance company, allowing simple interest at 4 per cent on his payments but disregarding insurance cost?

8. At each stroke an air pump withdraws one tenth of the total quantity of air under a bell jar. If there were 400 cubic inches of air under the bell jar originally, what portion of the original contents remains after eight strokes?

PLANE GEOMETRY

1. Find the number of degrees, minutes, and seconds in each angle of a triangle if the angles are in the ratio of 1, 5, and 7.

2. Prove a law for the sum of the interior angles of a polygon of n sides, and find the value in degrees, minutes, and seconds of each angle of a regular polygon of 48 sides.

3. Illustrate geometrically the algebraic product of $a + b$ and $a - b$ where a and b are lines.

4. Derive a general formula for the number of degrees in the arcs intercepted by (1) two tangents to a circle which make with each other an angle of a° ; (2) the three sides of an inscribed isosceles triangle whose vertex angle is b° .

5. Show how to divide a line in extreme and mean ratio, prove your construction, and find correct to three decimal places the value of the greater segment if the length of the whole line is 10 units.

6. Find the area of a trapezoid if the bases are 15 and 20, and the legs are 29 and 30. State the geometric theorems involved in the solution of this problem.

7. Construct three mutually tangent circles, having given their three lines of centers; and find the diameters of three such circles, if their lines of centers are respectively 4, 5, and 6 inches.

8. Prove that the areas of two similar triangles are proportional to the squares of homologous lines, and find the distance from the vertex of a line drawn parallel to the base of a triangle of altitude 20 which divides the triangle in the ratio of 3 : 5.

5. **Arouse and accumulate Interest by giving High Appraisal to Mathematical Work.** As long as pupils believe that here is a dry compulsory subject that is included for some mysterious purpose, it is not likely that they will wax very enthusiastic over its pursuit. But boom it, increase its value, make it the mark of high achievement, not for the brilliant alone, but for the average, and there is likelihood that mathematics will become more significant. An interesting scheme of appraisal is reported by W. D. Reeve of the University High School, University of Chicago.¹

Bulletin boards about five feet long and four feet wide made of cork were placed in each of the mathematics rooms; and upon these boards the work of the different classes in mathematics was posted from day to day in order that the pupils and also the visitors might observe what was being done. The papers to be posted were chosen on the basis of neatness, importance of subject-matter, care in development of proofs, unusually good independent work and special reports, . . . items of mathematical importance secured by either the teachers or the pupils were posted on these boards. . . . When exhibited work is taken down from these bulletin boards, it is filed under proper headings so that any particular kind of material is always available. Some of these classifications are for the first year: algebra, geometry, correlations, geometric constructions with ruler and compass, use of squared paper, scale drawings, trigonometric work, historical material, recreations. . . . Geometry model and special devices for use in the class-room have been made by pupils in the mathematics classes to illustrate some theorem or to clarify some mathematical concept and these are a part of the permanent exhibit.

6. **Frequent and Systematic Use should be made of the Library.** Ordinarily, library work is confined to history, Eng-

¹ *School and Society*, August 7, 1915.

lish, etc., but Mr. Reeve outlines in the same article a valuable procedure. A sketch of his method will possibly suggest other schemes :

a. Pupils may read a good treatment of, *e.g.*, the introduction to logarithms and report to the class what they have read.

b. Read biographies of great mathematicians. Pupils write brief accounts of these biographies and file them with the portraits of the mathematicians. This work correlates splendidly with English composition.

c. Books like Sophy Winthrop's "Sister and Saint," reflecting events in Pascal's life, are interesting and furnish a helpful correlation between mathematics and literature.

d. Problems of camp life, outings, travel can be solved by reference work. A boy at a summer camp wanted to know the distance from one shore of a lake to the opposite shore in order to lay out a swimming course. He was directed to books in the library on trigonometry and surveying.

e. Organize a mathematical club. It will find much material in the library.

f. Reference work in astronomy texts. Problems in solid geometry and trigonometry within the pupil's ability can there be found.

g. Charts on fundamental theorems should be available in the library for consultation by pupils and beginning teachers.

h. Organize a clipping bureau with references to mathematical topics properly filed.

i. Have on hand books on methods for practice teachers.

7. The Teacher of Mathematics must advertise the Subject by every Sort of Striking Media. Modern discussions on reorganization should not discourage teachers into believing that the battle is lost. Criticism should lead to careful self-examination. We need to know definitely and with evidence what

mathematics is good for and how it should be taught. High school teachers can render invaluable service by collecting data and by compelling careful attention and the attitude of real sympathy toward their claims.

8. The Aim constantly in View should be to develop Independent Thinking. Mathematics is essentially concerned with comparisons. It is impossible to compare unless we know definitely what is the exact meaning of the objects placed over against one another. There must be acute analysis and then, so to speak, the tying together or connecting all the similar characteristics existing between the objects compared. Common laws or principles are established or framed by studying many similarities. We may employ diagrams, figures, analytical pictures to this end; but in mathematics the comparison takes place verbally or by means of numbers. Supervising study in mathematics means, then, directing the pupil through each step and noting where he is weakest and giving him special instruction at that point.

9. Class Management of Double Period in Joliet, Ill. The head of the mathematics department in the Joliet Township high school reports his general method as follows:

Theoretically, the first of the double periods is used for recitation and the second period for study of the next day's lesson under the supervision of the teacher.

The uses of these two periods vary, however, according to the subject.

In the first semester algebra, the first period is used for recitation, and the second period almost exclusively for supervised study.

The lesson for the next day is assigned, maximum and minimum in length, and the papers collected at the end of the second

period. I have assigned as long lessons as I was accustomed to do under the old single period scheme and have found 90 per cent of my pupils able to hand in all the work completed. The *maximum* and *minimum* assignments take care of the good and slow pupil.

In second semester algebra, the same scheme is followed as in first semester algebra. Some home work is required of the pupils not able to keep up with the pace set by the class.

In first semester geometry, more time is required for construction work, and accordingly less time is left for recitation in the first period than in either algebra class. For this reason, some of the teachers use ten minutes of the second period for recitation. One teacher reports that, as a rule, he follows the same scheme as in algebra.

In the second semester geometry classes, fifteen minutes of the second period is used quite often for recitation. The pupil would not be able to get his lesson in one period even if he had the opportunity of studying all the second period.

Sometimes in the development of a new subject, all the second period must be used for recitation and explanation, and at such time the teacher has the greatest opportunity to show the pupil how to study.

GENERAL SUMMARY

The need of understanding the problem of individual differences is perhaps more urgent in supervising the study of mathematics than in any other subject. The teacher can easily become a drill master and nothing more. By industrious preparation of every assignment, employing a variety of texts, periodicals, mathematical puzzles, and by seeking ever for original problems among the pupils themselves, much of the inevitable monotony can be relieved. Whenever a prin-

ciple can be illustrated in practical application, this should be done, for reasoning can employ reality just as well as symbols or theoretical situations! It is, moreover, fundamental to know what difficulties the pupils have and why they have them. Deal with symptoms and causes,—not with ideal mentality.

CHAPTER XIII

HOW TO SUPERVISE THE STUDY OF SCIENCE

I. GENERAL VS. SPECIAL SCIENCE COURSES

SUPERVISED study has been referred to as the laboratory method. It would seem, therefore, that little need be said about supervising the study of the sciences, for they already are employing the ideal method. A few considerations, however, demand attention. The present discussion on special *vs.* general science has arisen as a form of reaction toward the claim by science teachers that science is practical; it is by far the best means of training pupils to think (one hears uproarious laughter from the classicists!), and furthermore the scientific method alone leads to truth. The author once engaged in a useless debate with a biologist who claimed that life, love, ambition, hate, æsthetic enjoyment, flash of insight, etc. are so many varieties of chemical reaction. He loved his wife and children because ions or electrons entered into peculiar combinations stimulating certain modes of responses. (It is easy to see how feeding a man to make him loving is a direct application of this physiologico-chemical-affection theory. Ergo, increase domestic science courses.)

Careful study of the secondary school program of studies and evidence from many fields of industry have quickened the suspicion that little science is a dangerous thing and that

too much science may lead to perverted specialization. For this reason the organizing of general science courses in place of the usual physics, chemistry, botany, zoölogy, etc., in high school seems to hold a strong advantage. Again, there are a variety of plans available. The following may prove suggestive :

1. The earth as a planet. Giving in a brief general way something of the universe — its magnitude, distance of stars, etc.
2. Water and its uses.
 - (a) Composition, showing electrolysis and synthesis.
 - (b) Different physical states, and applications of each.
 - (c) Climatic influences.
 - (d) Commercial relations.
3. Air.
 - (a) Physical properties.
 - (b) Chemical properties.
 - (c) Temperature changes and the seasons.
 - (d) The water and the air.
 - (e) Weather.
 - (f) Dusts, molds, and bacteria.
 - (g) Insects.
4. Work and energy.
 - (a) By running water.
 - (b) Machines.
 - (c) Energy and its transformation.
 - (d) The sun as a source of energy.
 - (e) Energy for plants and animals.
5. The earth's crust.
 - (a) Effect of natural forces.
 - (b) Structure and composition of soils.
 - (c) Origin of soils.
 - (d) Necessary constituents to support life in the soils.
6. Magnetism and electricity.

- (a) Compass.
 - (b) Earth as a magnet.
 - (c) Simple battery.
 - (d) Conductors and non-conductors.
 - (e) Simple applications.
7. Sound and light.
- (a) Simple experiments to show relative velocities.
 - (b) Applications.

II. THE AIM IN STUDYING SCIENCE

Any who have watched pupils at work in science courses may well wonder what cultural or practical value can come from such loose-jointed endeavors. Scientific vision? Never. Love of science? Statistics don't so indicate. Scientific method? Perhaps. Love of nature? The pupil instinctively does love nature. Understanding of natural laws? Possibly. There can be little doubt that something definite must be kept in view, and this something needs to be within the pupil's reach. A reasonable aim seems to be to awaken in the pupil an intelligent interest in his natural environment, — an interest that ultimately may lead him to investigate how nature ever increasingly can be harnessed into service for man. But this ultimate goal, it will be admitted, is far beyond the reach of many. The average citizen needs to know enough science to make him respect the systematic advance of progress. He should be persuaded to respect the scientist, the inventor, the explorer as much as he does the financier or the soldier. Careful and patient gropings for more light must be regarded as the usual method of reaching greater truth. The individual, even from a practical point of view, should know the insect life of his community, its dangers or its advantages, and how

to respond to each set of conditions. The "fly-swatting" campaign is an illustration. The war on the mosquito is another. One of the deepest regrets of the author's life is his all too meager knowledge of trees, birds, plants, flowers, the fundamentals of physics and chemistry. Man should know his environment. Progressive citizenship demands it. The ancient exhortation "Let me write a nation's song and I care not who make her laws" may well read in these days: "Let me produce finer crops, fairer flowers, safer buildings, lighter conveniences, readier modes of travel, prettier homes, more beautiful cities, better food, and I care not who makes the laws, for a happy people require only a minimum of laws." Happy living simply means living at peace with nature.

A panorama of what science has done — an excursion into the wonderland of invention, discovery, research — should be democracy's gift to every citizen. The courses in science may or may not produce better thinkers — let us hope they do; they may or may not develop Edisons, Teslas, Marconis, Burbanks, Pascals, and Darwins — let us pray they will; but if the high school boy and girl can be so directed in their study that they will respect their environment because they know something of its wonders, a vast contribution to society's welfare has been made.

III. SUGGESTIONS FOR DIRECTING THE STUDY OF SCIENCE

Two lines of direction are necessary:

1. **The Laboratory.** Attention should be focused on the following details of the laboratory method:

- a. *The Experiments.* Pupils do not find these always interesting. They are frequently more difficult than author

of textbook or teacher anticipates. These conditions are due to the following limitations in the pupil:

Sensory and Muscular Inaccuracy. Handling apparatus frequently results in breakage, waste, inaccuracy, etc., due in the main to the pupil's lack of trained vision or to inadequate muscular control. He must form such habits of accuracy of manipulation as are necessary for his present course. Highly refined dexterity, of course, should not be expected.

Vagueness of Purpose. The experiment means nothing unless the problem is clearly defined. Again, the assignment must be scrupulously exact. No pupil should engage in an experiment until he knows the problem so clearly that the process of the experiment is to him a progression toward a well-known end. This end need not include special applications at first; there should always be present an element of surprise.

Lecture demonstrations by teacher or by some capable pupil may well vary class experiments. Wherever time can be saved without neglecting needful "self-discovery" methods, this should be done.

Orderly procedure is important. Too much emphasis cannot be placed on the need of organization. This depends upon analysis of the problem and the proceeding by carefully planned steps. The practice of following an outline and checking each step is essential. Results should be recorded opposite each step checked.

b. Notebooks. A convenient type of notebook consists of "Day-tickets"; that is, each pupil has a hook on which he hangs the notes of each experiment. Later these "tickets" are placed in a loose-leaf notebook for reference. Filing experiments, as indicated on page 186, is also recommended by

some teachers. Parker¹ gives excellent illustrations of other forms.² Certain things should be avoided in the keeping of notebooks :

Too much measurement.

Too many drawings. Analytical drawings are preferable. They indicate careful thinking.

Too many references.

Too many problems.

c. *J. E. Mill's Directions for Laboratory Work.* Professor J. E. Mills, consulting chemist in Columbia, S.C., has prepared a careful list of laboratory directions which are applicable in any high school.³

(1) The laboratory course should be designed to increase the pupil's interest in his work, to increase his power to see, think, and do for himself, and to make him acquainted with the chemicals, methods of manipulations, reactions, and laws, at first hand.

(2) Have the pupil keep a laboratory notebook, and insist on the use of reasonably good English, on neatness, and on clearness, and that all entries shall be made when the experiment is performed. Full directions, some explanations and questions, are useful in the laboratory manual, but strictly guiding subheads are to be avoided. A loose-leaf system is an advantage.

(3) The attention of the teacher must be given repeatedly to each individual student while in the laboratory.

(4) Some problems should accompany the course in chemistry. These problems should always be practical and should be made more of a laboratory than a class-room exercise.

(5) Do not have much exact measurement. A student may

¹ Op. cit., pp. 452, 453.

² W. C. Greer, *The Teaching of Chemistry in Secondary Schools*, or *School Review*, 1906, Vol. XIV, pp. 282-286.

³ Johnston and others, *High School Education*, 1912, p. 194.

measure a thing exactly and know nothing about it. In fact his mind is easily diverted from the real problem to the mechanical details of the measurement. Some science courses have been aptly called "starvation courses in measurements."

(6) Sacrifice some of the experiments "in the book" for some more nearly home-made. The added interest will repay the trouble.

(7) Make the student think, but do not expect him to rediscover chemical laws, or to prove them. A little consideration of any law will probably show you that you could not, if turned loose in the best chemical laboratory in the country, prove the law in six months. Let the experiments illustrate the laws; they will help the student to remember and to understand them.

(8) Sometimes the student gets more results than he can take care of. He may not select the one that you had in mind. Do not expect him always to draw your conclusion, without your assistance, from an experiment assigned by you.

2. Outdoor Observation and General Reading. While the laboratory is necessary, as much time as possible should be spent outdoors in studying trees, plants, flowers, crops, stock, birds, insects, industrial science as in the various kinds of mills where the principles of physics and chemistry are applied, lay of the land, weather conditions, etc. Training pupils to observe things is all important. The usual excursions where teachers and class spend the hour or an occasional day outdoors might well be multiplied. Such excursions might be planned in the summer time especially. Extending the school year a month and devoting this extra time to scientific observation is advocated by some educators. The Boy Scout and Camp-fire Girls organizations do much of this, but it is especially a school task that would bring the school closer to the community.

a. Original Problems. A large variety of problems, discovered by the pupils themselves or investigated by them in group assignments, will provide motivation and practical application of methods and subject matter. The following lists by John G. Coulter and by Lewis Elhuff offer many suggestions:

THE COULTER LIST

(1) Water: Its state and changes. The course of a drop. Evaporation. Molecules. Condensation of steam. Solid, liquid, gas. Frost and dew. Distillation. Rainfall.

(2) Evaporation: Kinetic theory. Molecular motion. Flow of solids. Saturated atmosphere. Perspiration. Loss of heat by evaporation. Humidity. Dewpoint.

(3) Effects of water on earth's surface. Erosion. Movements of earth's crust. Effect of water on distribution of plants. Topography. Glaciers.

(4) Solutions: Solvent and solute. Osmosis. Sugar and starch. Importance of solution in life processes. Solution of gases; air in water.

(5) Man's supply of water: Wells and springs. The underground region. Chief facts as to the earth's interior. Artesian wells.

(6) Suction pump: atmospheric pressure. Study of barometer. Relation to weather. Torricelli's experiment.

(7) Archimedes' principle: water pressure. Specific gravity. Laws of liquid pressure. Water works.

(8) Water power: Transformation of energy. Hydraulic motors. Turbines.

(9) Steampower: Principles of steam engine. Water and steam power compared as to the forces involved; *i.e.*, gravity and heat.

(10) Water and agriculture: Uses of water in farming. Irrigation and drainage. Roots and water. Application of osmosis.

(11) Origin of soil: Necessity of soil in connection with food production. Organic and inorganic compounds. Minerals. Factors in rock weathering.

(12) Kinds of soil: Various bases of classification. Tillage. Alluvial soil. Flood plains. Glacial soils. Water retention.

(13) Fertility and soil life: Bacteria. Cycle of organic and inorganic. Factors of fertility. Use of fertilizers.

(14) Mechanical work: Simple machines. Principle of doing things gradually. Inclined plane. Levers.

(15) Work and energy: Gravitation. Forms of energy. Conservation of energy. Transmission and transformation. Potential and kinetic energy. Newton and law of universal gravitation. Tides. Surface tension. Capillarity.

(16) Heat: Study of familiar heat phenomena. Discovery of fire.

(17) Measurements of heat: Thermometer. Calorimeter. Specific heat.

(18) Heat and cold: Freezing of ice-cream as basis for illustration of principles.

(19) Some effects of heat: Expansion of water in freezing. Convection currents.

(20) The atmosphere: Its general nature. Its effects on solar heat. Its composition.

(21) Water and air compared: Mixtures and compounds. Atoms and elements. Chemical changes.

(22) Heat and the atmosphere: Radiation, conduction, and convection. Their effects on weather.

(23) The seasons and the solar system: Revolutions of the planets. Effects of the inclination of earth's axis. The equinoxes. The zones.

(24) Winds and weather: Interpretation of weather maps. Kinds of winds. Land and sea effects on winds.

(25) Economic importance of winds, rains, cyclones, clouds, tornadoes.

(26) Heating and ventilation. Study of air phenomena indoors.

(27) Combustion: History of its interpretation. The phlogiston theory. Principles of combustion as illustrated in burning of candle and care of furnace.

(28) Light, color, and sound: Light compared with heat. Radiant energy. The spectrum. Other light-phenomena.

(29) Some effects of light: Photography. Photosynthesis.

(30) Food and the nutritive cycle: The transition from inorganic to organic and the reverse. Carbohydrates, fats, proteids. Protoplasm. Respiration. Oxidation. (This constitutes the "bridge" to the study of organisms as basic material.)

THE ELHUFF LIST

Simple home chemistry: Easy tests for distinguishing acids, bases, neutral salts, and their action upon one another. Soap making and soap characteristics, hard water and economic methods for softening it. Chemistry of baking, methods of using leavening agents and why they are used.

Preservatives: Harmless ones and how to use them; those which are injurious and how to avoid them.

Disinfectants: Those easily used in the home and how. Use of heat as a disinfectant in cooking and for pasteurizing milk.

Habit-forming agents: Stimulants in common use, as tea, coffee, cocoa, and many so-called soft drinks. Narcotics in common use, as tobacco, alcoholic drinks, opium, and cocaine compounds.

General effect of heat, use of the thermometer, heating of buildings, ventilation of home and school, weather conditions and weather maps and reports. Use of the barometer, clothing according to weather, amount and kind.

Foods: Kinds, costs, comparative nutritive values, cooking, fireless cooker, buying of foods, home economics.

Methods of purifying water in the home, simple properties of

gases, refrigeration at home and in storage houses, ice-making and its use as a cooling agent. Distillation, its uses and its products used at home.

Simple machines: Enough to understand how to use the common mechanical devices. City water supply and purification; how and why. Street cleaning; best methods and why. Cleanliness about the home.

Light: To understand the use of simple optical instruments and cameras, and how to care for the eyes. Also to learn a few astronomical facts and something about colors and the rainbow.

Sound: Its nature, cause, and speed. Simple musical instruments and the nature of hearing and the care of the ears.

Plant growth: Its nature, conditions for growth, plant propagation at home, and man's relation to plant life.

Animal development: Types from the lowest to the highest forms, relation of animals to plants, man's relation to both, diseases caused by both, and man's place in nature.

b. Recent Additions to the Fortune of Knowledge. Acquaintance with the origin, originator, and principles of the following inventions and discoveries would certainly add to the pupil's culture and also serve as illustrations of other problems discussed in class.

ONE HUNDRED THINGS NOT KNOWN THIRTY-FIVE
YEARS AGO¹

- | | |
|----------------|--------------------|
| 1. X-Rays. | 7. Antiseptics. |
| 2. Radium. | 8. Submarines. |
| 3. Pianolas. | 9. Gas engines. |
| 4. Asbestos. | 10. Skyscrapers. |
| 5. Liquid air. | 11. Parcels post. |
| 6. Harvesters. | 12. Ball bearings. |

¹ National Cash Register Co. Also *Journal of Education*, October 21, 1915.

13. Reflectoscopes.
14. Vacuum brakes.
15. Power elevators.
16. High-speed steel.
17. Fireless cookers.
18. Vacuum bottles.
19. Canning factory.
20. Vacuum cleaners.
21. Electric furnaces.
22. Industrial hygiene.
23. Steel construction.
24. Department stores.
25. Color photography.
26. Smokeless powder.
27. Telephotography.
28. Electric locomotives.
29. Telegraphy tape printers.
30. Rotary printing presses.
31. Electric street railway cars.
32. Automatic shoe machinery.
33. Automobile fire equipment.
34. Aluminum.
35. Aëroplanes.
36. Air brushes.
37. Seismograph.
38. Motorcycle.
39. Gas mantles.
40. Stereopticon.
41. Pasteurization.
42. Automobiles.
43. Block signals.
44. Carpet sweepers.
45. Tube railways.
46. Bertillon system.
47. Asphalt paving.
48. Addressographs.
49. Janney couplers.
50. Safety matches.
51. Pneumatic tires.
52. Industrial education.
53. Electric heating.
54. Pneumatic appliances.
55. Moving pictures.
56. Electric welding.
57. Hot dining plates.
58. Pneumatic tubes.
59. Automatic typewriters.
60. Adding machines.
61. Wireless telegraphy.
62. Pneumatic mailing tubes.
63. Picture post cards.
64. Electric cooking utensils.
65. Minimum wage scale.
66. Industrial physical education.
67. Industrial welfare work.
68. Turbines.
69. Monorail.
70. Acetylene.
71. Dictograph.
72. Mailometer.
73. Hydroplanes.
74. Kinetophone.
75. Air purifiers.
76. Paper towels.
77. Kinemacolor.
78. Merten's press.
79. School gardens.

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|---------------------------|-------------------------------|
| 80. Telautography. | 93. Offset printing presses. |
| 81. Boys' gardens. | 94. Household heating plants. |
| 82. Photo-engraving. | 95. Commercial storage bat- |
| 83. Cash registers. | teries. |
| 84. Paper milk bottles. | 96. Commission government. |
| 85. Maxim silencer. | 97. Reënforced concrete. |
| 86. Smoke consumers. | 98. Industrial safety appli- |
| 87. Hydroaëroplanes. | ances. |
| 88. Fireless locomotives. | 99. Miners' electric safety |
| 89. Electric lighting. | lamps. |
| 90. Measuring pumps. | 100. Sanitary drinking foun- |
| 91. Typesetting machines. | tains. |
| 92. Wireless telephony. | |

GENERAL SUMMARY

The trend seems to be toward general science courses. Whether or not these will prove advantageous, it doubtless is true that the pupil in studying science needs to be introduced gradually to the material and the methods of science. Laboratory methods must be supplemented by outdoor observation. Knowledge of his environment and how to use it by scientific aids is essential to awakening interest in the things of science. While the methods of laboratory procedure may not of themselves "spread" over into other fields, no one will doubt that acquaintance with and training in the inductive and deductive modes of reasonings can fail to arouse demand for evidence and thereby reduce the all too prevalent acceptance of superstitious explanations.

CHAPTER XIV

HOW TO SUPERVISE THE STUDY OF LANGUAGES

I. THE MOST WORKABLE AIM

WITH a few exceptions the methods of studying any foreign language are essentially the same. It is not necessary, therefore, in this brief discussion to treat Latin, German, French, and Spanish under separate heads, save where illustrations of methods are given. Language study correlates easily with the study of history and literature, and it may become feasible, especially in dealing with the modern languages, to correlate them with courses in industrial science.

The ever recurring question of "Why study this subject?" must be answered carefully; for, as indicated elsewhere, the teacher's aim will, of course, affect the method employed — both in teaching and in supervising study. The usual reasons for studying language are familiar enough. It is not so much a question which of these methods is the best as it is to select an aim which is workable in the high school with the greatest possible efficiency. Is the aim disciplinary? — then we have the traditional stressing of grammar, much translation, and long terms of drill work. Is the aim pronunciation and speaking? — then detailed attention to phonetics and the direct method is required. Is the aim historical and social? — then language is supplemented by the study of customs, costumes,

architecture, and history of the people whose language is being studied. Is the aim literary? — then the pupil is directed to study literature, and the effort is made to introduce him as soon as possible to the masterpieces of the foreign tongue.

While none of these aims needs wholly to exclude the others, it nevertheless is important to have an aim toward which progress is easier and more advantageous than perhaps some other aim. The disciplinary point of view can be dismissed as being at least doubtful. The social aim is important, but the pupil can get just as much information about foreign peoples without spending so many hours on language study. There remain three values: the ability to speak, to read foreign languages, and to more easily handle English with a background of Latin and Greek. Again appraisal is difficult. The ability to speak and understand other languages is becoming more and more indispensable to men of world views. Reading other literatures is aided by translations, but only a small amount of foreign literature is so available. As for better understanding the English vocabulary by a knowledge of Latin, there is doubtless considerable truth in this claim.

It would seem that inasmuch as language, being a form of self-expression, introduces one to the viewpoints and attitudes of other people, every citizen, especially in the coming days of closer intimacy with Europe and South America, should know one or two languages besides his own. If a choice must be made between eliminating either languages or mathematics, the latter must make room for even more language study. The most defensible claim for the languages is based on their enlarging one's acquaintance with other peoples more intimately through a knowledge of their literature, and also

on the development thereby of a higher appreciation of one's own nationality in custom and speech.

1. **The Relation between Latin and English.** A suggestive investigation by Mr. Lynn H. Harris¹ yields conclusions that in the main can be agreed to by the less enthusiastic supporter of Latin. Mr. Harris writes: "If Latin were taught less as a dead language, with perhaps less stress on its purely mechanical side, and more as being in intimate and vital relation to our living English tongue, not only would the Latin courses be better patronized, but English composition would receive a healthy and desirable stimulus." Doubtless accurate knowledge of Latin spelling is an aid to English spelling, and acquaintance with Latin definitions suggests English meanings of derivatives.

Recent exhibits in high schools showing in multicolor and multiform detail how many common words in English are derived from Latin are certainly informing. Without wishing to seem unfriendly to Cicero's noble speech, one cannot refrain from the query as to whether this is the only or even the best means of learning English. Mr. Harris's results in his investigation are hardly convincing. 82.44 per cent of the pupils who had studied Latin one year did better than those who had studied no Latin at all, 82.13 per cent of the latter spelling a list of words correctly. But of those who had studied Latin two years only 80.20 per cent did well, and 81.52 per cent of the three-year group spelled with accuracy. Of the four-year group 90.10 did well, — a gain of only 8 points over those who had not studied Latin at all. These results are hardly in favor of four years of Latin.

Professor Starch of the University of Wisconsin in his

¹ *School and Society*, August 14, 1915, pp. 251, 252.

study¹ found "that the study of foreign languages materially increases a pupil's knowledge of English grammar, but only slightly increases his ability in the correct usage of the English language. Pupils who had had 10 to 15 years of foreign languages made a score in grammatical knowledge of 63; while pupils who had had 2 to 5 years of foreign language made a score of 47.8, a difference of 32.6 per cent in favor of the former group. The corresponding difference in correctness of usage is only 6.4 per cent. Starch concludes from his whole study that there is no basis for holding that foreign language study possesses any disciplinary value or results in any derived benefits.

Unquestionably, faithful study of any language will prove valuable in the study of another; for the subject is fascinating, and its interrelationships are alluringly full of interest. The greater one's familiarity with many languages, the easier it is to learn others. One gradually acquires a language taste. Words come to have a charm due to long association, and this intimacy of cultural insight into language enriches one's vocabulary and variety of phrasing so that one's native tongue is considerably improved. Goethe was right when he wrote, "Wer fremde Sprachen nicht kann weiss nichts von seiner eigenen."

The revised syllabus for a three-year high school course in German, presented at the German section of the Twenty-seventh Educational Conference at the University of Chicago,² indicates that reading and grammar requirements have been reduced. Composition in the third year has been made lighter. The syllabus is reproduced here for the convenience of those contemplating a revision of language courses.

¹ *School Review*, December, 1915, pp. 697-703.

² *School Review*, November, 1915.

GERMAN I

READING

60-100 pages.

COMPOSITION

Drill in construction of sentences based on text. Free reproduction of very simple reading matter, oral and written. Some translation into German of English based on text read.

1. Thoroughness in all phases of the work is necessary.
2. Special attention should be given to pronunciation.
3. Grammatical forms and rules of grammar should be learned through emphasis put on their application in the oral and written composition mentioned above.
4. The memorizing of a few easy poems is desirable. Incidentally, this may be a great aid in the acquiring of a correct pronunciation.

GRAMMAR

Declension of the definite and indefinite articles, demonstratives, and possessive adjectives.

Noun declension.

Adjective declension: weak and mixed.

Declension of personal pronouns.

The interrogative and relative pronouns should be explained, but thorough drill in their use should be reserved for the second year.

Verbs:

Principal parts of the most common strong verbs (about 40).

Conjunction of strong and weak verbs in five tenses.

Polite form of the imperative.

Present and imperfect tenses of the modals and their most common meanings.

The reflexive verbs, present and imperfect.

Prepositions with the dative, the accusative, and with both the dative and the accusative.

Word order :

Normal, including the use of *aber*, *allein*, *sondern*, *denn*, *oder*, and *und*.

Inverted order.

Transposed order, with special emphasis on the use of *als*, *weil*, *wenn*, and *dass*.

No topic need be presented in all its details, but whatever is taken up should be done thoroughly. The mastery of noun, adjective, and verb forms and of word order is of especial importance.

GERMAN II

READING

100-150 pages.

COMPOSITION

Questions and answers on simple texts should lead to the oral and written reproduction of the same. Translation into German of connected English based on text read may be substituted in part.

GRAMMAR

A. The following subjects should be thoroughly taught and drilled :

Review of grammar of German I.

Frequent review of adjective declension and word order, by means of "German-German" exercises.

Inflections not completed in German I, as follows: nouns; adjectives — strong declension, comparison; relative and interrogative pronouns; verbs — principal parts of additional strong verbs and the most common irregular weak verbs, occurring in the reading; the most common verbs requiring the dative.

B. The following topics may be explained and some drill may be given. It cannot be expected, however, that proficiency can

be attained at this time in their use in oral and written composition. Further drill must be given in succeeding years :

Modals, and verbs used like the modals, in perfect tenses with accompanying infinitive, not including their use in dependent clauses.

The passive voice, five tenses.

The subjunctive mode in indirect discourse and unreal condition, and the first conditional in connection with these.

The most common prepositions with the genitive.

GERMAN III

READING

About 300 pages. Texts recommended for German II may well be used for more rapid reading in German III and for outside reading. The magazines *Aus Nah und Fern* and *Die Woche* are recommended for use throughout the course at the discretion of the teacher. The classics and the formal study of literature should not yet be attempted. It should rather be the aim to cultivate an intelligent appreciation of the works of the modern authors read in class.

COMPOSITION

Some free reproduction of texts read and simple theme-writing on topics suggested by the text.

For more thorough work in free reproduction, simpler texts should be chosen ; as, for example, Sterne's *Geschichten vom Rhein*.

GRAMMAR

Review of grammar and thorough drill on topics under "B" in German II.

Further details of grammar as the need for them arises.

II. METHODS OF APPROACH

There is no need to discuss in detail the usual methods employed in teaching language. The Grammar, or Traditional, Method is generally discarded. The Natural Method has many devotees. The Psychological seems the most advantageous, but, in spite of its seeming scientific authority, has serious disadvantages. The direct, or inductive, method at present occupies the center of the stage. But names must not confuse the teacher into a biased attitude. Probably there is something fundamental in all of these methods. Be this as it may, there is general agreement that the pupil must be directed in his studying of language in certain definite processes. These will now be discussed.

III. SUPERVISING THE STUDY OF LANGUAGE

1. *How to Begin.* There is need in the beginning for the teacher to realize that the pupil must acquire language experience before he can make much progress. This means that as rapidly as possible the pupil should gain considerable knowledge of the rudiments of language work such as vocabulary, construction, translation, before he undertakes a more thorough study of these language factors. In the beginning of any language study (and by beginning is here meant the first year) it probably is best to avoid translation from English into the foreign language. Joynes and Meissner recommend this, and Victor does the same.

a. *The Gurlitt Method.* A simple but effective procedure makes use of what might be called the cumulative conversa-

tional method.¹ The following illustrations indicate the general form of what is known as the Gurlitt Method

Sum, ich bin (I am)

(Quintus, Marcus, Titus pueri.) Collōquium.

1. Q. Cur laetus es, Marce?

2. M. Laetus SUM, quod magister meus diligentiam meam laudavit.

3. T. Quid magister tuus recitavit?

4. M. Homeri, poetae Graeci, fabulas recitavit. ESTISNE periti linguae Graecae?

5. Q. Non linguae Graecae, sed notarum Graecarum periti SUMUS.

6. T. Fabulae poetarum Graecorum etiam parvis pueris notae SUNT.

7. ESTNE magister tuus vir Graecus?

8. Non Graecus vir est, sed diu in Graecia fuit.

Conjugation: Indicative present of SUM, I am

Sūm	sūmus
ēs	ēstis
ēst	sūnt

Endings: The vocative (case of address) is like the nominative.

Exception: The vocative of the masculine of the 2d declension in *us* ends in *ē*; nom. *Marcus*; voc. *Marcē* (1), pp. 14, 15.

Word lists are kept by each pupil as a catalogue of the new words that have been learned. For example, the foregoing lesson is listed as follows:

colloquium — conversation.

diligentia — earnestly, diligently.

fabula — fable

¹ See *Lateinische Fibel Sexta*. Wiegandt and Griehen, Berlin, or Steckert and Co., New York, 1908.

poeta — poet
lingua — speech
meus, a, um — my
tuus, a, um — your, etc., etc.

Review lists according to declension and conjugation with the number of the lesson are additional aids. For example:

FIRST DECLENSION

(a) Feminine

20. *diligentia* — diligently
fabula — fable
lingua — speech

SECOND DECLENSION

(a) masculine

None of this declension appeared in lesson 20.

(b) neuter

20. *colloquium* — conversation, etc., etc.

It is important that the pupil be introduced entertainingly to grammatical structure, and that interesting provisions be provided for drill, review, organization, and originality.

The first year is in many respects the crucial test. Then there may be aroused either love for or hatred toward language work. Too much paradigm work, too much writing, and constant drill on syntax will deaden the liveliest interest. Much time should be spent on the reading lesson. Ability to read simple prose or foreign newspapers and advertisements creates confidence. What is needed is this self-confidence that rests securely on being able to do some things well, how-

ever few they may be. If language is worth studying at all, it should begin early and continue for several years. But in this prolonged period of study the bulk of the work, authorities believe, should deal with language as literature that can be easily understood and appreciated.

b. Method of Supervision in Joliet, Ill. The following report of the method employed in the department of German in the High School of Joliet, Illinois, illustrates in some detail the procedure in supervising the study of any foreign language:

Supervised study in the first year modern language classes is mainly responsible for the markedly improved results over those of former years. Supervised study necessitated the double period and was introduced into the modern language department almost five years ago. During this time a plan has been evolved for making the best possible use to the student of the two periods.

The class in beginning German averages six hours per week. Probably seventy-five per cent of the work is oral, consisting of drill in pronunciation by reading and individual answering of simple German questions. The six or eight hours of written work include copying of German text, translation into German of short English sentences, and dictation.

On a particular day the period begins with oral questions, some of which the pupils have had before, on "Was wir haben," p. 35. The aim, primarily, is to pave the way for the development of Lesson V. The paving blocks, which in this case are the demonstrative adjectives, "dieser," "jener," and "welcher," are laid in such a way that they might not prove stumbling blocks later on. The questions on "Was wir haben" are directed as follows:

Question: Hast du einen Bruder, James?

Answer: Ja, ich habe einen Bruder.

Q: Hast du nur einen Bruder?

A: Ja, ich habe nur einen Bruder.

Q: Hast du einen Bruder, Russell?

A: Ja, ich habe einen Bruder.

Q: Hast du nur einen Bruder?

A: Nein, ich habe mehr als einen Bruder.

Then follows the statement: "Jener Knabe (pointing to James) hat nur einen Bruder. Dieser Knabe (signifying Russell) hat mehr als einen Bruder." A few more examples are used, such as: "Dieses Mädchen hat einen Gelben," u. s. w. Then came the question: "Welches Mädchen hat einen gelben Bleistift?" The teacher makes use of the vocabulary already learned by the pupils and asks questions for about ten minutes requiring the use of "dieser," "jener," and "welcher" in the pupils' replies.

Perhaps twenty-five minutes of the period has been used thus far. The teacher now sends all the class to the board for rapid work in review on verb forms and drill in the use of the possessives. At the close of the first period she opens the door and windows, and allows pupils a recess of three minutes.

After the gong for the beginning of the second period has sounded, the class repeats in concert two short verses they have recently learned, illustrating the accusative:

"Die Katze fängt die Maus.

"Der Hund bewacht das Haus," u. s. w.

Pupils then give the selection separately.

Again the pupils are sent to the board this time to write from dictation the teacher's German question and then their own answer immediately below. The questions, though based on this selection, again bring into use "welcher," "dieser," and "jener."

For example:

Q: Welches Tier bewacht das Haus?

A: Der Hund bewacht es.

Q: Ist dieses Tier kleiner oder grösser als die Katze?

A: Es ist grösser als sie.

Q: Fangt jener grössere Hund eine kleine Maus? u. s. w.

For the rest of the time (about twenty-five minutes) the teacher assigns (1) ten sentences to be written.

At the end of the double period the papers with the written exercise are handed in. This is *all independent* work.

During the preparation of the work the teacher watches to see that pupils are actually reading and studying the assignment.

In conclusion it should be emphasized that the points on which the successful use of this system hinges are:

(1) Here, as in all recitations, definite aims, and a simple, direct method to attain these aims.

(2) A change in the kind of recitation work so that pupils are not tired from sustained effort; *i.e.*, neither too much oral work of the same sort, nor a prolonged stay at the board.

(3) A short recess — three minutes.

(4) Enough time set aside in the second period for the assimilation of new ideas, and for necessary preparation of the next day's recitation.

2. *Pronunciation.* In the presence of a rather heated discussion on this phase of language work, it is difficult to choose from among the "phoneticists," "travelists," and "mutists" — those who believe in the science of pronunciation by an international code; those who just as ardently hold that only by traveling and living among foreign people can one acquire dialect, pitch, intonation, rhythm, and pronunciation peculiar to each country; and those^s who just as firmly argue that especially in high school pronunciation is of minor importance. In Latin no one knows accurately how the Romans spoke; in foreign languages there are numerous dialects (as in America), and for these reasons it is best to stress reading for the sake of literature only.

Again one's aim must be accurate. Language study certainly ought to include speaking or at least ability to pro-

nounce. By the science of phonetics American teachers can lay a fairly stable foundation of pronunciation whose finer development must depend upon contact with the foreign born. Mr. Philip N. Churchman of Clark College¹ offers the following suggestions :

(1) Intensive study of pronunciation should be concentrated into a few weeks without any accompanying language work.

(2) Class meetings should be increased and hours of preparation diminished. This really means devoting the whole period to pronunciation and employing extra study periods for the same thing, always in the teacher's presence. Private work is less important in this kind of studying.

(3) Private practice should take place only after the teacher is reasonably sure that the children understand how to pronounce.

(4) Expect some study of theory, except by young children ; *i.e.*, the ability to describe differences in pronunciation.

(5) A moderate use of phonetics or some simple alphabet that gives a visual representation of the sounds. For example, in French : veille (vèy), veuille (veuy), vaille (vay). Ah ! que c'est beau (âksèbô) ; ça me ferait de la peine (sam frè dla pèn). Phonetics simply means the omission of all silent letters and the representation of the sounds by a clear and consistent notation ; thus doight = dwa, quand = ka.²

3. *Memory Work and Vocabulary.* However one's methods may seem to be an improvement over others, it is impossible to avoid the difficulty involved in learning a foreign vocabulary. Memory and imitation are essential in learning any language. Gouin has done excellent work in this field. The recent volume by Dr. Gonzales Lodge, *The*

¹ *School Review*, October, 1914, pp. 545-554.

² See also E. B. Babcock, "The Use of Phonetics in Teaching Elementary French," *School Review*, November, 1913.

Vocabulary of High School Latin, contains 2000 words serially numbered. Supervising the study of Latin by this aid may follow this order :

Each pupil is given a notebook numbered 1-2000. In each lesson the new words of the next lesson are written opposite the appropriate number in the notebook. The pupils are required to make their own dictionary. The additional assignment of making a list of English derivatives from *scribo*, for example, and its prefixes, *ad*, *can*, *in pre*, is also helpful.

Writing opposite each foreign word the English equivalent with similarities indicated is very helpful. Examples of one type of this method are given in the discussion on memory, page 212. The German prepositions *aus*, *bei*, *mit*, *nach* were associated by one pupil in the sentence "*the house by the meat market.*" Mnemonic devices are arbitrary and frequently too complicated, but each pupil should be encouraged to construct such schemes. Vocabularies must be learned in some manner, and a good system of mnemonic association is helpful. For example :

mensa — "*men sat*" (table)
puella — "*ella*" (girl's name)
satis — *satisfy* (enough)
unbegründet — *undergrounded*.
geschworen — *swore*.

Such associations are not always possible, but when fairly evident and not too strained, they serve well. Pupils should be encouraged also to find relations with other foreign languages they may know. The resemblances between Scandinavian and German are manifold either by spelling or by pronunciation. For example :

SCANDINAVIAN	GERMAN	ENGLISH
förlora	verloren	lose
kosta	kosten	cost
karta	Karte	chart
gifva	geben	give
tvífel	Zweifel	doubt

Similar relations are of course numerous between Latin, French, Italian, and Spanish.

An excellent means of enlarging one's vocabulary quickly is to compare the English Bible with a translation in the language being studied. The familiar editions of Polyglot Bibles are helpful. The importance of the pupil gaining as quickly as possible a goodly list of foreign words must not be overlooked. The niceties of grammatical form come more slowly, but first there must be something to work with.

4. *Organization and Translation.* Any one who has studied a foreign language knows how confusing and discouraging are the first attempts in translation. The pupil finds a strange word, consults the glossary, refers to peculiarities of syntax, and in a labored, piecelike mode of manufacture he struggles toward a meaning. The author of the selection would often be amazed at the gargoyle meanings resulting from such efforts. The pupil has no background of organization. He does not know what the whole thing means, and he fails to grasp the fact that men think in Latin, German, French, etc., very much as they do in English. There is great need of directing the pupil at this point.

a. *The Kingsley Outlines.* The following plan is suggested by the *Kingsley Latin Outline Studies*¹ and indicates what can be done in German, French, or Spanish.²

¹ Palmer Co.

² See also *Education*, December, 1915.

- I. Title of the oration — *Oratio pro Archia*.
 1. Meaning of the oration.
 2. Place in Cicero's collection or relation to other orations.
 3. The persons involved — who they are.
- II. Historical sketch — Occasion of the oration.
- III. The oration —
 1. Introduction.
 - a. Chapter 1. Main points.
 - (1) Whatever accomplishments and knowledge I possess I owe to Archias.
 - (2) By that skill in oratory which Archias taught me, I have been of great service to the state.
Therefore, I ought "to help and save the very man from whom I have received that gift which has enabled me to bring help to many and salvation to some."
 - b. Chapter 2. Main points.
 - (1) Apology and justification for the character of this oration.
 - (2) I beg that I may be allowed to depart from the general style of forensic pleading and speak briefly of the study of polite literature and refined arts.
 - (3) By such an oration I hope to make you realize what a desirable citizen Aulus Licinius is; and to make you feel that he is worthy, even if he were not one, of being now made a citizen.
 2. The body of the oration.
 - a. Cicero's defense of the poet Archias, etc., etc.
In the beginning such an outline should appear on the blackboard and later by reference to translations the pupils should make their own outlines. Only by having some understanding of the organization can the pupil appreciate the sig-

nificance of what he translates. He is thus provided with a background; he knows where he is going; he is not lost in a jungle of forms and meanings.

b. Method at Leland Stanford. Professor M. M. Skinner of Leland Stanford Jr. University¹ gives a detailed account of his method of teaching pupils to read German. In substance the method involves the following steps. In sight reading one pupil is sent to the board, where he writes in sentence order all the words of the passage he knows, or such words could be underlined in the books. Space is left for the supplying of words not understood. By calling attention to similarities between the strange and other familiar words, and by gradually building up a framework of meaning the unknown words were added, the instructor only rarely telling the meaning outright. It is an excellent illustration of supervising the study of a new passage.

c. The Use of Translations. Much unnecessary criticism has been directed against pupils for translating by means of "ponies." Some teachers are broad-minded enough actually to recommend such helps and then resort to a variety of means to test the pupil's knowledge of forms. It is far better to permit such helps openly than to connive at their secret use. Pupils are going to use them, whatever the teacher's attitude may be. When used properly, they are a valuable aid to a clear organization of the material.

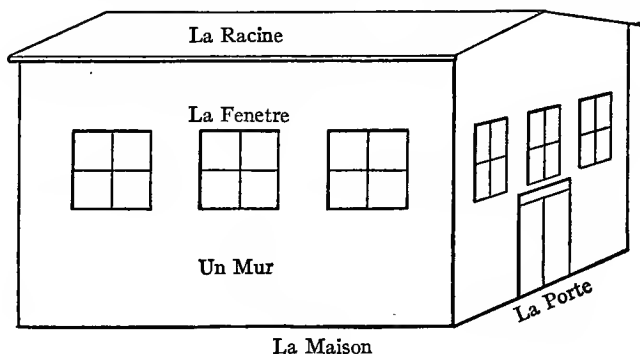
5. *Conversation.* The ability to speak modern languages can be developed quite easily by a method like the following:

a. Draw, for example, the picture of a house, naming at first a few of its details.

¹ *School Review*, October, 1909, pp. 529-541.

- b. The teacher pronounces each word as she points to the object.
- c. The class repeats the words.
- d. The teacher speaks a simple sentence, using each word.
- e. The sentence is repeated by the class.
- f. The sentence is now written by teacher and next by the class.
- g. Later other parts of the house are added and the same procedure repeated.

h. Reviews are conducted each day by conversation about the house, and gradually other subjects are developed in a similar



manner and used in conversation. In this way travel, buying and selling, home life, school life may be interpreted in foreign terms.

6. *Dramatization and Magazine Work.* In many high schools needful application is provided by the pupils writing plays, stories, news items, and editorials in the foreign language. The following illustrations serve as models of the type of work. The play was written by a second-year German class composed of secondary pupils and college students.¹

¹ *Teaching*, published by Kansas State Normal School, Emporia, Kan., Vol. I, No. 1, August, 1914.

ROTKÄPPCHEN

I AKT

(Die Mutter in einer kleinen Küche. Das Mädchen spielt draussen.)

DIE MUTTER (*hält die rote Kappe hinter sich*): Mein liebes Kind! Komm' her, ich habe dir etwas Schönes zu zeigen.

DAS MÄDCHEN (*läuft in das Zimmer*): Was hast du, Mütterchen? Zeig' es mir.

DIE MUTTER (*zeigt es dem Mädchen*): Wie gefällt das dir, mein Kind?

DAS MÄDCHEN: Setz' es mir auf den Kopf. (*Läuft zum Spiegel.*)

DIE MUTTER: Es steht ihr ganz gut, mit den blauen Augen, den roten Wangen und dem blonden Haare.

DAS MÄDCHEN (*läuft zur Mutter und umarmt sie*): Wie wunderschön es ist! Hast du das für mich gemacht?

DIE MUTTER: Ja und die Leute werden dich von jetzt an Rotkäppchen nennen!

DAS MÄDCHEN (*tanzt herum*): Wenn nur die Grossmutter es sehen könnte!

DIE MUTTER: Das wurde ihr grosse Freude machen, denn sie ist sehr krank, also darfst du ihr etwas zu essen bringen.

DAS MÄDCHEN (*klatscht in die Hände*): Soll ich einen Korb dafür holen?

DIE MUTTER: Ja, und auch eine schöne, weisse Serviette.

DAS MÄDCHEN (*holt diese Sachen*): Hier sind sie.

DIE MUTTER: Lege zuerst die Serviette in den Korb und darauf den schönen Kuchen; gelb wie Gold.

DAS MÄDCHEN: Was hast du noch für Grossmütterchen?

DIE MUTTER (*geht zum Schrank und holt ein Täubchen*): Hier ist ein Täubchen. Lege es neben den Kuchen.

DAS MÄDCHEN: Soll ich eine Serviette über diese guten Dinge legen?

DIE MUTTER: Ja, und noch süsse Trauben und goldgelbe Orangen darauf.

DAS MÄDCHEN: Mutter, ist das alles?

DIE MUTTER: Ja, das ist genug. Nimm den Korb und trage ihm sorgfältig.

DAS MÄDCHEN (*küsst die Mutter*): Auf wiedersehn.

DIE MUTTER: Auf wiedersehn, mein Kind, und beeile dich durch den Wald.

2 AKT

(Das Mädchen in dem Walde)

DAS MÄDCHEN (*für sich*): Ach, wie schön sind diese Blumen in dem Walde. (*Sie läuft hin und her und pflückt die Blumen.*) Hier sind weisse Blumen und dort sind rote und auch blaue und gelbe. Jetzt habe ich einen schönen Strauss den ich der Grossmutter bringen werde. Das wird ihr grossen Freude machen.

(*Inzwischen kommt der Wolf herein.*)

DER WOLF (*für sich*): Das ist Rotkäppchen. Das schöne Kind ist ein guter Bissen für mich. (*Zu dem Mädchen:*) Wo gehst du hin?

DAS MÄDCHEN: Ich werde meine Grossmutter besuchen.

DER WOLF: Wo wohnt, denn, deine Grossmutter, liebes Kind?

DAS MÄDCHEN: Sie wohnt in dem Häuschen am Ende des Waldes und sie ist krank.

DER WOLF: Ich halte nicht mehr auf. (*Läuft in den Wald hinein.*)

DAS MÄDCHEN (*für sich*): Ich muss mich beeilen. (*Läuft ab.*)

3 AKT

(Im Hause der Grossmutter wo sie im Bette liegt.)

DIE GROSSMUTTER (*hort ein Kloppen an die Tür*): Komm herein!

DER WOLF (*tritt in das Zimmer*): Bist du krank, Grossmutter?

(*Der Wolf kommt an des Bett und zieht die Vorhänge zurück.*)

DIE GROSSMUTTER: Ja, aber was willst du heir?

DER WOLF: Dich fressen!

(*Springt auf das Bett und verschlingt die arme Frau.*)

DER WOLF (*für sich*): Ich setze mich die weisse Haube auf und lege mich in das Bett und decke mich zu. So warte ich auf Rotkäppchen.

DAS MÄDCHEN (*tritt in das Zimmer der Grossmutter*): Guten Morgen, Grossmutter! Ich bringe dir etwas Gutes zu essen und zu trinken.

DER WOLF: Eh?

DAS MÄDCHEN (*geht an das Bett und zieht die Vorhänge zurück*): Grossmutter, wie wunderlich du aus siehst! Was hast du für grosse Ohren?

DER WOLF: Dass ich dich besser hören kann.

DER MÄDCHEN: Und was hast du für grosse Augen, Grossmutter?

DER WOLF: Dass ich dich besser sehen kann.

DAS MÄDCHEN: Ei, und was hast du für grosse Hände?

DER WOLF: Dasz ich besser packen kann. (*Springt aus dem Bett, packt Rotkäppchen und verschlingtes. Der Wolf legt sich wieder in das Bett, schläft und schnarcht.*)

DER JÄGER (*für sich der am offenen Fenster steht*): Wie die alte Frau schnarcht! Ich will sehen was ihr fehlt. (*Tritt in die Stube und kommt an das Bett.*)

DER JÄGER (*leise für sich, indem er erschrocken zurückfährt*): Was finde ich hier — einen Wolf? Das böse Tier muss ich gleich erschieszen. Vielleicht hat er abe die Grossmutter gefressen. Also nehme ich mein Messer und schneide ihm den Leib auf. (*Er tut es.*)

DAS MÄDCHEN (*springt heraus*): Ach, wie dunkel war es in dem Leibe des Wolfes.

DIE GROSSMUTTER (*springt dann heraus*): Wie froh bin ich wieder hier zu sein.

DAS MÄDCHEN (*holt den Korb*): Hier, Grossmutter, ist etwas Gutes und Schönes zu essen.

DIE GROSSMUTTER: Mein liebes Kind, setze alles auf den Tisch und wir wollen davon essen und trinken.

DAS MÄDCHEN: Hier sind auch schöne Blumen. (*Riecht an den Blumen.*) Wie schön sie duften!

DAS MÄDCHEN: Ich muss nach Hause eilen und der Mutter alles erzählen. Auf wiedersehen, Grossmütterchen. (*Ab.*)

DER JÄGER: Ich habe dem Wolf den Pelz angezogen und werde denselben mitnehmen. Lebewohl!

The following illustration of the publication by high school pupils in Crawfordsville, Ind., shows how Latin may be used interestingly in an informal type of exercise. The extracts indicate the versatility of the young editors.

Scientia Domestica. — Scientia Domestica per hunc annum fuit acceptissima. Hoc studium vero fuit magno usui mihi. In sex primis dictatis rudimenta fructus conservandi et coaguli faciendi cognovimus.

Pueri Societatis Athletica Multitudinem Vehementer Convocarunt. — Omnes pueri societatis athleticae ad deligendos duces anno postero convenerunt. "Preston Rudy" multo et divino impetu imperator est delectus, et "Fredericus Hunt" etiam proximus imperio est delectus. Magistratus librari et aerari praefecti constituti sunt et "Delhertus Clements" ad hos habendos est delectus. . . .

Conflagration calamitosissima multis mensibus in "Indianapolis" fuit incendium aedifici magni "D. O. Langen" centum septuaginta quinque milibus thaleris amissis.

7. *Schemes of Directions and Procedure.* The following methods are in actual practice and, therefore, may prove helpful to others.

a. *Plan in Richmond, Va.* Superintendent E. E. Smith of Richmond, Va., — southern division, — employs the following plan :

METHODS IN LANGUAGES FOR FIRST YEAR

LATIN, SPANISH, FRENCH, AND GERMAN

I. When pupil is reciting, face the class.

II. The pupil's reply to a question must contain a complete thought and a complete sentence or discourse. Example: Adjectives should not be written or given alone, but should be given with *nouns* and almost always the entire sentence.

III. The teacher must not repeat the reply.

IV. *Speaking the language wherever possible is most important.* The idea is to develop the "language sense" in the pupil. For example: If a specific effort is being made to get a *thought*, then a word or two which is not exactly right need not necessarily be corrected.

V. It is expected that pupils should show growth in using the foreign vocabularies both orally and in writing, and this should be measured fairly accurately.

VI. Frequently, children should read aloud whole paragraphs expressively to the class from the language. No translation should be given, but questions asked in the foreign language should be answered from the printed page.

VII. Avoid too much conscious attention to grammatical forms, except as they occur in the pupil's experience in English grammar.

VIII. Grammatical ideas, other than English, are developed by using the necessary constructions *often* in sentences and drilling by means of the well-known sentence wholes in which these occur.

IX. Results can best be attained by the teacher's *thinking* in terms of the language and hence getting and using:

- A. Variety in procedure, such as animated conversations, questions, requests, commands, songs, etc.
- B. Devices such as matches or "bees" of various kinds, particularly vocabulary matches, varying in detail, illustrative map work, little stories to be read and translated at a hearing, stories told and appreciated, composite stories made by the pupils or "original compositions," pupils asking one another questions, games and the like.
- C. Dramatic exercises to eventually emerge, so to speak.

X. *Written exercises should be given only* to illustrate certain principles which have been inductively taught, and this should be the final fixing of the ideas in the pupil's mind. It is thought evident that adequate and sufficient oral work has been given so that the written work is smooth and not laborious. It should be directed so that mistakes might not be actually executed or "blind alleys" followed, as is done when written alone.

XI. Teach vocabulary in manner advocated for spelling (Circular No. 14).¹ Children must keep a personal list. The class list is also necessary. Teachers are responsible for knowing the total vocabulary, at any time, with which the class has been presented in terms of different parts of speech.

XII. No written work on blackboard should be left *which contains mistakes*.

b. A brief symposium by several teachers.

¹ This is important: (1) Present the word by writing it on the board, (2) pronounce it, (3) rub it off, (4) have children pronounce it (not in chorus), (5) have sentences given using the word or *phrase*, (6) have the word or phrase used a *number of times* that day in writing or translation, and (7) provide for sufficient and frequent recall of the words from time to time.

GERMAN

The German department conducts reviews by returning corrected test papers and making them the basis of discussion. The following description shows the way these papers are discussed:

I return a test on the subject of prepositions and model auxiliaries, the work of six weeks. All mistakes have been marked on the paper. I call on a pupil to translate "for whom." If he says "für wem" I ask him to give the list of prepositions which govern the accusative, and also the declension of *wer*; then he corrects his mistake. I call on another pupil to translate "with whom," "against whom," and then "for what," and "against what." The next phrase "from it," leads to a discussion and drill on such forms as *dafür*, *davon*, and *daraus*. The third word, *meineswillen*, leads to a review of the personal pronouns, and a drill on the use of a noun preceding the preposition.

When it has been possible, I have given examples involving the grammatical principle and then have had the pupils deduce the rule. For example, when the lesson was on prepositions governing the genitive, I wrote upon the board several illustrative sentences, and the pupils with little explanation readily saw that such prepositions governed that case. Then, after the preposition, I gave a definite time for study, during which I required the pupils to learn all the prepositions governing the genitive and to use them in sentences. Then a short recitation followed, which for the most part was spontaneous and enthusiastic, owing, I think, to the supervised study.

I have had the pupils study, and I have tried to correct their methods of studying. Personally, I feel that the correct method is so different with different minds that the only way to help a pupil is to watch him and then make suggestions for a change. Too many pupils depend on memory, and then memorize in poor ways. Even in language the reasoning power should be used.

One or two poor pupils have improved their memorizing power by being required to write their rules, thus joining their eye and motor-muscle impressions to their ear impression. I have tried to have every German study-period typical of how the pupils should study at home.

Another teacher, in training pupils to form right habits of study, lays stress upon concentration. The first half of the extra period is to be used as a study-period. The teacher assigns a definite amount which he knows can be prepared in a given time. Absolute concentration upon a particular portion of the lesson, along lines which are at first indicated, is insisted upon. The other portion of the study-period is then given over to recitation upon the subject just studied. In this way the teacher is in a position to know which pupils must be taught how to study if any results are to be obtained.

A second point kept prominently in mind is the necessity of teaching children how to attack a lesson. The *modus operandi* differs with the teacher and the class. Instruction — direct and by example and suggestion — has been tried. All of the teachers seem to have found the presentation of a new lesson during this special period exceedingly helpful.

Sometimes I read aloud an anecdote taken from the textbook, or from some other book, and have the pupils translate from hearing. Sometimes I give an account of something connected with the lesson; for example, the life of Helen Keller proved interesting on the day the pupils added to their vocabulary the words "blind," "deaf," and "dumb." Sometimes I ask the pupils what they see in the schoolroom or from the school-room window. I teach the new word by writing it on the board and explaining the meaning, either by gesture or by familiar German words, rarely by the use of a dictionary. Often a pupil who has difficulty in learning from the printed page excels in the oral work.

LATIN

If we have been studying lessons with long or difficult vocabularies, or when a study of a conjugation or a declension has been completed, we have a vocabulary match. We give the nominative, genitive, and gender of the nouns, principal parts and synopses of verbs, type and comparison and adjectives, and formation and comparison of adverbs. These matches are conducted in two ways, either by "spelling down," or by "jumping," and then at the end of the period numbering for the next trial. A pupil who stays head two days in succession is on the honor roll and goes to the foot to start up in line again.

We frequently have sentences on the different constructions of the previous week, and after a great many sentences have been given by the teacher, as quickly as possible, each student is asked to make a good English sentence using only words and constructions that can be translated into Latin by the class. One student is asked to read his sentence and another to translate it, if it is a good sentence. If it is a good sentence containing forms unknown to the class, the reader is asked to translate it. At other times the sentences are put on the board for the whole class to translate, and then the work is corrected. The classes have also written original Latin compositions. The sentences were, of course, of the first and second reader class, but the classes seemed to enjoy the work, and received a little benefit therefrom.

We have used the additional study-period chiefly to break new ground. By this I mean we reserve this lesson chiefly for the development of a new topic, for practice for sight work, for translating, or for analysis of advanced English sentences. In other words, it is chiefly preparatory in nature. Any necessary memory work, on which such development is based, is arranged for on the previous days. Then, when the class is assembled, we examine and lay out our course for the following lesson or lessons during the week. From one third to one half of the first year work in Latin consists

of such advance explanation, so that we have been able to use this period advantageously in this way. The recitation is usually by volunteers, and, though no record of marks is kept as on other days, the pupils are quite as ready and interested as with their assigned work.

To be more specific, in vocabulary work we often take up a new vocabulary and read it over, separating stems from endings, and deciding to what declension or conjugation each word belongs and why. When that is decided, we name the model word like which it should be inflected, and mention any irregularity in the inflection. Following this, we sometimes decline to conjugate it to fix the forms more surely in mind. After reading a new vocabulary in this way, we translate new sentences containing these words, using the vocabulary freely for reference.

In considering Latin sentences we generally read at sight, calling on anyone to supply forgotten words, phrasing, and pointing out relations indicated by endings. In case of hesitation, guidance is furnished by calling attention to the most important clues to the meaning, the subject, the verb, the object, and the division of the sentence into clauses, as shown by the introductory word and the verb, or the division into phrases indicated by a preposition and its object or by two or more in agreement. Time is saved and a better chance given to slow pupils in this work if the sentences are assigned and a minute or two given for their preparation, without reference to notes or vocabulary, so that the recitation is prompt. Sometimes we read a short anecdote from the Latin. Each student is given one word for which he is responsible; a moment is given for preparation, so that the new words may be found in the vocabulary and the construction decided upon. Then the story is read in English, each student contributing his word. This keeps the pupils thinking, for no one wishes to break the chain. One week one of the boys brought to the class an original anecdote, entitled "Cæsar in London in 1910."

Sometimes the classes are divided into two sections, those above

65 per cent forming one section, those below, the other. Section I is given lists of sentences previously prepared to be translated into Latin or English, while the pupils of the other section are being drilled on the paradigms and principles of syntax. The last part of the period is spent in reviewing the work of the first section.

We have tried to enliven our uninteresting textbook somewhat by telling or reading a little about the Romans, their houses, and their games, and the education of the boys and girls. Since Roman history has been omitted from the curriculum of the first year, we have tried to give the pupils a little background for the English composition by explaining briefly the terms "consul," "prætor," "republic," etc., which they find in their lessons.

GENERAL SUMMARY

There are so many excellent texts and methods that in this chapter the attempt has been made simply to call attention to some of the helpful forms of procedure during the supervised study period. It is of utmost importance that teachers make use of the fact that the pupil needs a language background before he can make much progress. Details of grammar should be served in sentence form — nourishment must be made palatable. Ingenuity is just as important in the classroom as in the kitchen. Moreover, teachers should not become idolators of any general method. Variety, individual adaptation, revision are important attitudes in language instruction and supervision.

CHAPTER XV

SUPERVISING THE STUDY OF LITERATURE

I. THE PURPOSE OF LITERARY STUDY

NONE of the fine arts is equal in popularity to that of literature. In no other channel has man been able to express himself with so great an abandon, and with the range of influence possible through the printed page. The ability to read is craved by all men who have caught a glimpse of a finer world of ideas. And this ability to read, coupled with skill in writing, has done more to bring the race together than perhaps any other agency. Man instinctively craves self-expression in some form, and because writing or authorship is partly the possession of all there is a greater output of literature than of any other form of art, with the possible exception of music.

It ought to be apparent why high school pupils should study literature. Several reasons may be assigned.

1. **To gain Knowledge.** Information is conveyed by means of literature as a fine art or merely as a vehicle of communication. Ability to read understandingly a newspaper, a textbook, a report, advertisements, encyclopdia, etc., is essential to active citizenship. The examples cited may not be regarded as artistic forms of literature, but they are rapidly finding a place among the arts. Books on travel, science,

philosophy, biography, and history are certainly literature, as works by Dean Howells, Lyell, Darwin, Fabre, Hegel, Rousseau, J. S. Mill, Macaulay, Morley, and Woodrow Wilson indicate. They are replete with information in attractive literary style.

2. **To enrich One's Vocabulary.** Studying the dictionary doubtless has value, but no one would recommend this as the best means of acquiring a rich store of words. Reading now this, now that author, eventually provides one with synonyms, forms of expression, and terms that are serviceable both for speaking and for writing.

3. **To cultivate Style.** Literature is a form of self-expression, and therefore each writer's style will possess a certain amount of individuality. The pupil should not aim to imitate the style of another beyond the adoption of certain principles that supply rhythm, clearness, or brilliance. Acquaintance with the style of a Walter Pater, a Montaigne, a Maeterlinck, or a Van Dyke is favorable to cultivating one's own. It is almost impossible to become a fluent or readable writer without having browsed among great books.

4. **To relax the Mind.** The arts interpret life in order that life may be appreciated and enjoyed. Just as the organism needs a certain amount of sweetmeats, so the mind craves the pleasant stimulus of entertaining literature. It may be the delightful observations of *The Spectator*, the frolics of *Pickwick*, the whimsical comments of *Queed*, or the stirring adventures of *Don Quixote* and *Sherlock Holmes*. They introduce us to other worlds where we sit in the grandstand as it were and see the play in the arena. The taste for this form of relaxation must be educated away from mere sensory excitement to the rest and recreation estab-

lished by new and noble ideas, attractive pictures of life and living.

5. **To appreciate the Beautiful.** The man of books who reads many authors, and absorbs their best ideas, craves the environment of ideas in which they move, and experiences day by day the subtle transformation of his own personality into a composite self made up of influences radiated by many minds. There is a fascination in the doctrine of the Platonic ideas that life here is a copy of the permanent and beautiful yonder, and that our world and our personalities become nobler and more attractive as we approach the ultimate excellence of the beautiful ideas. High school pupils, soon to be swept into the maelstrom of struggle for careers and independence, need to carry with them the vision of something stabler and worthier than the torrential flux of things. The sordid, mean, compromising, selfish, ugly are so many forms of a lack of appreciation of highest values. The study of literature, therefore, must separate the veil between the cheap and the glorious. It must elevate the individual from the wilderness of mere sense enjoyment into the realm of desire for harmony, symmetry, simplicity, and unity of beautiful living. If it fails to accomplish this, then the course has ignobly failed.

In dealing with this question of purpose Dr. C. Alphonso Smith, under the title of *What Can Literature Do for Me?*¹ says:

1. It can give you an outlet — "The masters have found you and you have found yourself."

2. It can keep before you the vision of the ideal.

3. It can give you a better knowledge of human nature. "All literature reveals unconsciously something of the men who made it and something also of the people who like or dislike it."

¹ Doubleday, Page & Co., 1914.

4. It can restore the past to you.
5. It can show you the glory of the commonplace.
6. It can give you the mastery of your own language.

II. WHAT HIGH SCHOOL PUPILS LIKE TO READ

An interesting sidelight on the purpose of the study of literature is thrown by an investigation on the type of reading preferred by high school pupils. Lancaster¹ in his study of the question found that 812 pupils preferred to read novels; 797, poetry; 67, essays; 31, history; and 30, travel. It is interesting to find in this connection that Dr. Smith² gives a list of fictive characters that should be known by all students of literature. These are fifteen in number:

Ulysses in Homer's "Iliad" and especially in his "Odyssey."
King Arthur in Malory's "Morte d'Arthur" and Tennyson's "Idylls of the King."

Beatrice in Dante's "Divine Comedy."

Don Quixote in Cervante's "Don Quixote."

Falstaff in Shakespeare's "Henry IV" (Parts I and II) and "Merry Wives of Windsor."

Hamlet in Shakespeare's "Hamlet, Prince of Denmark."

Robinson Crusoe in Daniel Defoe's "Robinson Crusoe."

Faust in Goethe's "Faust."

Leatherstocking in James Fenimore Cooper's "Leatherstocking Tales."

Pippa in Robert Browning's "Pippa Passes."

Becky Sharp in Thackeray's "Vanity Fair."

David Copperfield in Dickens's "David Copperfield."

Silas Marner in George Eliot's "Silas Marner."

Jean Valjean in Victor Hugo's "Les Miserables."

¹ "Psychology and Pedagogy of Adolescence," *Ped. Sem.*, 1897, pp. 61-128.

² *Op. cit.*

Uncle Remus in Joel Chandler Harris's "Uncle Remus: His Songs and His Sayings," and "Nights with Uncle Remus."

Teachers of literature in high school could doubtless make similar lists by getting a large number of preferences from their classes. What characters ought they to know? Surely it is important to introduce young people to the nobility of literature, past and present, rather than to bore them with minute interpretations of passages to be written in notebooks.

III. HOW TO STUDY LITERATURE

One of the most important questions at this point is how much to require the pupil to know in the course on literature. There is abroad the impression that pupils are engaged in too many details in the English courses, or that appreciation of literature is spoiled by overanalysis of books and characters. Viewed from the standpoint of practical service (not necessarily a commercial term), it would seem that high school pupils ought to study literature in order to meet the following needs:

1. A broad knowledge of the history of literature in its relation to the modern history. The one interprets the other.
2. An understanding of the difference between a novel, a short story, and a play.
3. How to judge a piece of literature.
4. How to read with understanding and feeling.
5. The memorizing of poems or other selections.

What should be aimed at is not so much a rigidly developed knowledge of detailed contents of any particular series of books as accurate knowledge of the part literature has played in various historical periods, a familiarity with prose and poetic form so that reference to them in literature or in conversation

can be easily understood; the intelligent criticism of a book, so that when asked by one's friends to judge a book the individual can state why the particular judgment is given; and the delightful accomplishment of being able to read to others some book that they perhaps do not have time or inclination to read.

1. **A Broader Course of Reading.** To arouse and maintain interest in the study of literature it is necessary to revise the course of study followed in many schools. Such a revision was made by Mr. H. O. Church, principal of the J. Sterling Morton High School, Cicero, Ill.¹ Four fields of literature were covered, viz.: fiction, history, science, poetry, and belles-lettres. The following list omits the fourth year because as far as possible there is a duplication of the first college year English at this time. Pupils who expect to enter college are required to study only three years English, all others are required to take four years. During the fourth year, because a replica of the first college year in English, science books are omitted.

FIRST YEAR

FIRST SEMESTER

Fiction

Dickens: Nicholas Nickleby

Dickens: Dombey and Son

History

Franklin: Autobiography

Poetry

Arnold: Sohrab and Rustum

Bryant: Selections

Bryant: Ulysses

¹ *School Review*, September, 1913, pp. 461-466,

Science

Burroughs: Birds and Bees

Burroughs: Sharp Eyes and Other Papers

SECOND SEMESTER

Fiction

Dickens: Old Curiosity Shop

Scott: Ivanhoe

History

Parkman: Oregon Trail

Irving: Alhambra

Poetry

Lowell: Vision of Sir Launfal

Browning: Selections

Science

Burroughs: Squirrels and Other Fur-Bearers

Burroughs: Afoot and Afloat

SECOND YEAR

FIRST SEMESTER

Fiction

Blackmore: Lorna Doone

Hawthorne: House of Seven Gables

History

Parkman: Conspiracy of Pontiac

Prescott: Conquest of Mexico

Poetry

Shakespeare: As You Like It

Shakespeare: Twelfth Night

Science

Higginson: Three Out Door Papers

Lyell: Travels in America

Supervising the Study of Literature

SECOND SEMESTER

Fiction

Scott : The Talisman

Scott : Quentin Durward

History

Lincoln (Tarbell) : Speeches and Writings

Brown : Epoch Making Papers in United States History

Poetry

Shakespeare : Julius Cæsar

Shakespeare : Henry V

Science

Tyndall : Glaciers of the Alps

Burroughs : A Bunch of Herbs and Other Papers

THIRD YEAR

FIRST SEMESTER

Fiction

Eliot : Silas Marner

Thackeray : Henry Esmond

History

Fiske : Critical Period of American History

Motley : Peter the Great

Poetry

Tennyson ; Idylls of the King

Shakespeare : Macbeth

Science

Darwin : Voyage of the Beagle

Thoreau : Katahdin and Chesuncook

SECOND SEMESTER

Science

Huxley : Lay Sermons. L. 25

Darwin : Earth Worms. R. 25

Poetry

Milton: Minor Poems. R. 15

Milton: Paradise Lost. R. 15

History

Macaulay: Warren Hastings. Me. 12

Macaulay: Chatham. 9.15

Essay

Ruskin: Sesame and Lilies. R. 15

Thoreau: Walden. L. 25

Fiction

Hugo: Ninety Three. B. 45

Dickens: A Tale of Two Cities. L. 25

2. **How to direct the Pupil's Outside Reading.** Mr. T. A. Wallace, principal of the Crosby High School, Waterbury, Conn.,¹ reports a successful plan. At the beginning of the year a list of fiction (he frankly confesses inability to get pupils to read other kinds of literature) is posted at the school and at the city library. From this list the pupils are required to select one book a month. At the end of the month they report on sheets of paper with four columns.

NAME OF THE AUTHOR	TITLE OF BOOK	DATE	REMARKS

Under Remarks are criticisms, how they liked the book, a brief statement of the plot; but each pupil is allowed to do what he pleases about such comments except that if made at all they must be the pupil's own opinion.

¹ *School Review*, September, 1913, pp. 478-485.

3. Another scheme, less detailed, but possessing value is illustrated in the following suggestions:

For action, read Homer and Scott.

For conciseness, read Bacon and Pope.

For sublimity of conception, read Milton.

For vivacity, read Stevenson and Kipling.

For imagination, read Shakespeare and Job.

For common sense, read Benjamin Franklin.

For simplicity, read Burns, Whittier, and Bunyan.

For smoothness, read Addison and Hawthorne.

For humor, read Chaucer, Cervantes, Rabelais, and Mark Twain.

For choice of individual words, read Keats, Tennyson, and Emerson.

For the study of human nature, read Shakespeare and George Eliot.

For loving and patient observation of nature, read Thoreau, Burroughs, and Walton.

The list will have little value if the teacher finds it imperative to limit the choice to fiction. There are a few pupils, however, who can be tempted into other kinds of reading; and the teacher belongs just as much to the minority as to the many.

IV. METHODS OF SUPERVISING THE STUDY OF LITERATURE

In Chapter VIII several suggestions were given for supplementary reading. The teacher in directing the study of a piece of literature, to repeat, needs to guide the pupil along the following lines:

1. To read with pencil in hand.

2. To make excerpts or extracts. On the margin of the book a paragraph may be condensed into a single statement; or the same material can be written on inserted leaves.

3. To read with a definite object in view. There must be a leading point of view: an angle of vision, a problem, a goal idea that helps the reader to focus attention on the various details. This controlling purpose must be the author's.

4. To re-read for a better understanding, deeper appreciation, and a better retention of the material.

One teacher finds the following method helpful to her pupils in studying American literature:

"With the books open on our desks we begin an outline as a preparation for study. 'American Literature' is taken as the title of the entire outline, and the subject of the first chapter as the first large topic. Taking the chapter, paragraph by paragraph, we give the topics, using them either as topics or subtopics according to the importance of the contents.

"After much discussion, we decided that the idea of the first paragraph is 'the origin of literature.' From individual suggestions we draw the conclusion that 'the meaning of literature' is the next point. This brings us to the idea of 'English literature,' discussed under the heads: (1) characteristics, (2) growth, (3) divisions. The final topic of the chapter becomes 'causes for difference in British and American Literature.' Under each one of these topics are subtopics. The discovery of the important heads is what the pupil finds most difficult. If we can show him how to decide upon these, and how to attach to them, as minor details, the other ideas of the chapter, we have shown him how to study."

1. Studying the Novel. The aim of this form of literature should be kept clearly in mind. It is

To entertain by a series of humorous or thrilling incidents.

To awaken interest in social conditions demanding reform.

To portray historical characters and scenes more informally than is done by the average historian, as in Louisa Muhlbacks' novels.

To depict social and economic conditions of other days or of the present.

When we ask others about a book they have read, we desire to know if it merits our devoting time to it. If interesting, why is it so? If a profound study of character, what kind of character? These practical everyday experiences with books are vital in a course on literature. During an informal period the pupils should be led to speak of their impressions gained in reading. The teacher should be well read and by enthusiastic comments, comparisons, and criticism should seek to awaken in the pupils a faith in the value of knowing something about books. During this informal period the teacher should give a fair estimate of the best of past and modern novels. Although Goethe once said: "Do not study contemporaries, but those great men of the past whose works have always been valued and esteemed through the centuries," there are many books of the present worthy of our perusal. *Lady Baltimore*, *Richard Carvel*, *The Crisis*, *The Far Country*, *Queed*, *V. V.'s Eyes*, *The Harbor*, *The Harvester* — to mention the more recent — should be read and commented on in class.

b. A knowledge of the author's name, title of the book, publisher, date (year) of publication, kind of book (problem, historical, mystery, adventure, society, etc.), leading characters, skeleton of plot, general style, and method of developing the plot are among the essentials in any luminous discussion of a novel.

c. Novels are read mainly for the story. In high school courses much valuable time can be saved by omitting the long descriptive passages that are doubtless important as literature but hardly essential to the understanding of the

plot or story itself. Unnecessary details can well be omitted at this time. What is needed is rather accurate familiarity with the behavior of the characters and what they suggest.

d. Detective stories and short stories in modern magazines are rarely studied in high schools. A distinguished English educator, Frank Hayward,¹ suggests that the detective story can be studied as an exercise in thinking. Much of the cheap literature of the present deals with trashy mystery and detective tales, rightly condemned by thoughtful people. Sherlock Holmes, Lupin, Lequoc, and Kennedy, however, deserve a place in the fictive hall of fame and introduction to them and others of their stamp would elevate the pupil's taste in what is a normal desire of reading matter.

2. **The Essay.** Although, as a rule, high school pupils fail to find this form of literature appealing, something can be done to create a liking for its representatives. As some one has said: "If we want the bare fact, we go to history, or, with discrimination, to the newspaper; if we want a logical statement of principles, we go to philosophy; if we want the truth below the fact as a man of genius divines it, the truth touched with beauty as it lies in the vision of the artist, or irradiated with humor and projected against a background of other and diverse truth, as the humorist sees it, we turn to literature. In the essay we get a glimpse of character, a turn of humor, a significant aspect of affairs, interpenetrated by a rich personality."

One of the best suggestions for studying the essay has been given by Hamilton Wright Mabie in the following quotation:

¹ See his *The Lessons in Appreciation*, 1915.

"Three words define the best method of studying the essay: appreciation, analysis, comparison. The rule-of-thumb in literary study is at present so widespread and so tyrannical that it is necessary to protest against it at every turn. A great many people believe that salvation comes, not from a change of heart, but from a method of life; that, if a complex method of study is secured, the work is done; and the result is that there are hosts of people who know the definitions, but who do not know the things defined; who can repeat all the principal dates in literary history, but have not touched the heart of literature. It must be said over and over again, therefore, that the beginning of all wisdom in dealing with the work of art is to let it tell its own story, convey its own impression; in a word, making yourself thoroughly familiar with it, by holding a perfectly open mind to it until it possesses the imagination. If one wants to understand the 'Ode on a Grecian Urn,' for instance, let him begin by putting all criticism out of mind and learn the poem by heart: this is appreciation. When this stage has been reached, one can with safety consider the separate qualities of an essay, the manner of treatment, the arrangement of the topics, the special variety — whether of philosophic comment, of vital interest, of study of manners, of personal portraiture, or of humor. This prepares a student to understand the difference between an essay from the 'Spectator' and an essay by Charles Lamb.

"This kind of analysis lays open, but does not disintegrate, a piece of literary work. And it is aided and made more illuminating by comparison. One may be studying, for instance, the literary essay as a variety of the general literary form; let him compare Macaulay's Essay on Milton, Bagehot's Essay on Shakespeare. Arnold's Essay on Byron, and Lowell's Essay on Dante. These three words — appreciation, analysis, and comparison — suggest lines of work which do not run into tyrannical methods, but which may make highways into the heart of some of the best literature."

3. **The Drama.** Because its action is more rapid, descriptive matter confined to stage scenery, and the development of the plot brief, the study of the drama awakens quick response in most of us. It was written for acting — its appeal is the larger audience, whereas the novel addresses the individual reader. The method of study, therefore, will be in essential points different from that of the two forms already considered.

a. Overanalysis. Much writing, minute scrutiny of passages must be avoided. A knowledge of the story is, of course, fundamental. Some acquaintance with the sources of the play is equally desirable. Questions like the following:

Why did the people of Pope's day think little of Shakespeare? Why has Shakespeare come into favor again since then?

State what you know of the sources of any one of Shakespeare's plays.

are suggestive of the better mode of attack.¹

b. Modern Plays. The high school pupil, however, doubtless has been served *too much Shakespeare*. Modern dramatists are almost wholly neglected. Surely plays like "The Great Divide," "Servant in the House," "The Witching Hour," "The Rivals," "Secret Service," Molière's "The Sick Man," Barrie's "Quality Street," etc., deserve study. As it now is the high school pupil may know "Macbeth" and "Julius Cæsar," and "She Stoops to Conquer" not to mention the ever present "Hamlet," but has no knowledge of modern dramatic tendencies, or any clear conception of how to judge a play. The objection that the drama of to-day is hardly fit to be studied is made inadvisedly when one recalls some of the situations and *bon mots* of Shakespeare.

¹ James W. Linn, in *School Review*, February, 1911, p. 96.

Study of dramatic reviews, synopses in some of the magazines, would prove a wholesome variation in a course that often is little more than literary analysis.

c. Coöperative Plays and Novels. The occasional appearance of a coöperative novel and the not infrequent coöperative authorship of plays suggest a method of study that perhaps is feasible on a smaller scale in the high school. In these days of emphasis on application in education the coöperative authorship of a play by high school pupils for credit is a means of vitalizing the course. The usual method of dramatization is pleasantly and profitably aided by the pupils writing a play built on the principles of modern dramatics. Scenarios or synopses are also a helpful exercise.

4. **Poetry.** The common opinion that reading poetry is unmanly and impractical is doubtless one of the strongest reasons for high school boys disliking English. Anyone can hardly blame them in the light of what only too frequently takes place in these courses. Poetry is a form of philosophy, — it is an interpretation of life as art always is. It may be studied for its “prettiness” and thereby remain unintelligible. Studied as the poet’s observation of life’s subtler meaning or some phase of its many forms, it may become a most practical incentive to higher thinking, to more enduring effort, to hope, to abounding struggle toward an ever beckoning Best. No one can find value in poetry unless he has been trained to appreciate its purpose, its thought, and its form. The mere repetition of words, the mere memorizing of its lines, the mere analysis of its imagery avail but little. Something deeper and lovelier must be discovered and applied.

a. The problem of appreciation, while less compelling in high school than in more advanced courses, nevertheless demands

considerable attention. George Edward Woodberry¹ writes feelingly on this topic:

“The appreciation of literature is thus by no means a simple matter; it is not the ability to read; nor even a canon of criticism and rules of admiration and censure that are required; but a live soul, full of curiosity and interest in life, sensitive to impressions, acute and subtle in reception, prompt to complete a suggestion, and always ready with the light of its own life to serve as a lamp unto its feet. Appreciation of literature, too, is neither rapid nor final; it moves with no swifter step than life itself; and it opens, like life, always on larger horizons and other labors.”

The teacher's objective in supervising the study of poetry and all forms of literature lies, then, in creating a real love for the ideas and ideals of noble living stated in language, choice, melodious, and representative, that is, appreciated not merely for its music — happy or sublime, as this may be — but for its glimpse into the heart of man and into the slowly evolving process of man, ever to be the Near-God. “Literature is not an object of study but a mode of pleasure; it is not a thing to be known merely like science, but to be lived.”

b. The need of studying poetry as well as any form of literature is, however, quite apparent. Appreciation is rarely if ever intuitive. Appreciation depends upon apperception — the interpretation of the present in the terms of past experience. What we know guides us in understanding the strange. If a poem is obscure, this is due primarily to two causes: we fail to understand the language or we fail to understand the form. We lack experience by which to interpret the difficulty. Pupils, therefore, must study language and poetic

¹ See his chapter on “First Principles” in *The Appreciation of Literature* or in *Essays for College Men*.

form as a means of appreciating the thought and the ideal of the poem.

c. Method of Studying Poetry. This study should pursue the following methods:

(1) *Paragraphing.* The pupil must be able to state in his own words or the author's in prose form what the poem states. All of the finer meanings cannot be discussed in high school courses. In fact, poems become richer in meaning only by our own maturing experience. But the main currents of thought must be studied at first by this prose route.

(2) *Classification of Instincts and Imagery.* Literature is enriched and adorned by references to instincts and to the senses. Appreciation of an author's form of expression becomes more sympathetic when one understands what he is appealing to in human nature. Dowden¹ writes:

"From each work of a great author we advance to his total work, and thence to the man himself, — to the heart and brain from which all this manifold world of wisdom and wit and passion and beauty has proceeded. Here again, before we address ourselves to the interpretation of the author's mind, we patiently submit ourselves to a vast series of impressions. And in accordance with Bacon's maxim that a prudent interrogation is the half of knowledge, it is right to provide ourselves with a number of well-considered questions which we may address to our author. Let us cross-examine him as students of mental and moral science, and find replies in his written words. Are his senses vigorous and fine? Does he see colour as well as form? Does he delight in all that appeals to the sense of hearing, — the voice of nature, and the melody and harmonies of the art of man? Thus Wordsworth,

¹ *Transcripts and Studies*, London, 1888. Quoted by Carpenter, Baker, and Scott in *The Teaching of English*, 1913, pp. 255-257.

exquisitely organized for enjoying and interpreting all natural, and, if we may so say, homeless and primitive sounds, had little feeling for the delights of music. Can he enrich his poetry by gifts from the sense of smell, as did Keats; or is his nose, like Wordsworth's, an idle promontory projecting into a desert air? Has he, like Browning, a vigorous pleasure in all strenuous muscular movements; or does he, like Shelley, live rapturously in the finest nervous thrills? How does he experience and interpret the feeling of sex, and in what parts of his entire nature does that feeling find its elevating connections and associations? What are his special intellectual powers? Is his intellect combative or contemplative? What are the laws which chiefly preside over the associations of his ideas? What are the emotions which he feels most strongly, and how do his emotions coalesce with one another? Wonder, terror, awe, love, grief, hope, despondency, the benevolent affections, admiration, and religious sentiment, the moral sentiment, the emotion of power, irascible emotion, ideal emotion — how do these make themselves felt in and through his writings? What is his feeling for the beautiful, the sublime, the ludicrous? Is he framed to believe or framed to doubt? Is he prudent, just, temperate, or the reverse of these? These and like questions are not to be crudely and formally proposed, but are to be used with tact; nor should the critic press for hard and definite answers, but know how skilfully to glean its meaning from an evasion. He is a dull cross-examiner who will invariably follow the scheme which he has thought out and prepared beforehand, and who cannot vary his questions to surprise or beguile the truth from an unwilling witness. But the tact which comes from natural gift and from experience may be well supported by something of method, — method well hidden away from the surface and from sight."

(3) *Interpretation of allusions in figures of speech or references.* This is aided by information gleaned in practically every subject of the program of studies.

(4) *A brief study of the author's life* with the occasion of the poem, and the author's purpose in writing it. This should be aided by Literary Maps. A large map on the black-board, containing author's birthplace, home, and where he wrote each poem or book, and date may be of great value in forming a background of interpretation and appreciation.

(5) *Memorizing*. A large part of the time now wasted in notebook work could be spent to greater advantage in learning poems or quotations. The most economical method of memorizing is discussed on page 209. It is important in memory work to learn the poems as illustrations of some great ideas or facts. If memorized simply as poems, they are easily forgotten, but if learned in association with a great thought, they are easily retained. For example:

POEMS OF IDEALISM OR INSPIRATION

To the True Romance, Kipling
Locksley Hall, Tennyson
Excelsior, Longfellow
The Chambered Nautilus, Lowell

POEMS OF HISTORICAL EVENTS

The Concord Hymn, Emerson
Paul Revere's Ride, Longfellow

POEMS OF NATURE AND ANIMALS

The Skylark, Shelley
To a Mouse, Burns
Snowbound, Whittier

This linking of poem and view of life is a cultural process. To have a quotation at one's command in life's shifting situa-

tions is the mark of a good reader. Nothing is more important in the study of literature than this storehouse of illustrations.

d. Merriam's Method of studying "Evangeline." An excellent illustration of how pupils may be directed in studying "Evangeline" is furnished by Dr. Merriam in the following lesson plan.

LESSON PLAN IN EVANGELINE

PRELIMINARY

As a part of the previously assigned lesson, the class was directed to read sections I and II. The teacher added: "This is largely descriptive. Therefore read carefully, endeavoring to get clear pictures. At the next meeting of the class, be prepared to describe these pictures."

THE CLASS HOUR

I. Recitation: (A small portion of the period.)

1. On the study of the previous day.
2. On the portion of "Evangeline" assigned.
 1. What pictures did you find described?
Answers would be, for example:
 1. The village of Grand Pré.
 2. The simple life of the Acadian farmers.
 3. Evangeline.
 4. Evangeline's home.
 2. Describe each picture.

(This portion of the recitation is merely to make sure that the class has at hand the data needed for the class study.)

II. Class Study: (A large portion of the period, usually with texts open.)

Problem :

1. To observe certain details that contributed to the quiet happiness of the Acadian farmers.
2. To examine some of the means by which the poet presented his pictures.

1. What evidences are given of this quiet happiness?

Answers would include, for example :

1. "Softly the Angelus sounded."
2. "Homeward serenely she walked. . . ."
3. "Neither locks . . . nor bars. . . ."
4. "Free from fear . . . and envy. . . ."
5. "The blacksmith . . . honored of all men."

What possible interruptions of this happiness?

Answers may be such as :

1. "Dikes . . . shut out the turbulent tides."
2. ". . . foretold a winter long and inclement."
3. ". . . English ships . . . with their cannon."
2. What means has the poet used to present these pictures so well?

Answer may be :

1. The inverted and transposed order in sentences, *e.g.*
 1. "This is the forest primeval."
 2. "Black were her eyes."
2. A descriptive vocabulary, *e.g.* turbulent, wreathing, murmuring.
3. Allusions, *e.g.*
 1. "The penitent Peter."
 2. "Louisburg is not forgotten."

III. Assignment : (A few minutes at the close of the period.)

1. On class study.
 1. Prepare in some detail a written outline of the evidences of happiness among these Acadian people.
 2. Supplement (orally) the poem by further facts relative to

1. The Angelus.
2. Fear — tyrants, and envy — republics.
3. "The Village Blacksmith."
4. The religious life of the Acadians.
5. The penitent Peter.

(These would probably be individual assignments.)

3. Express in prose (written) at least ten of the most poetic expressions.
2. On new material.
Read III and IV and select the topic.

e. Reading. What precedes finds its happiest application in the artistic reading of poetry with a sense of rhythm, a feeling of the poet's emotion, and a technic of vocal expression that lends charm and uplift to all who hear the poem read. Too little time is devoted to this phase of study. Again, it may be suggested that less notebook work and more oral interpretation is needed in the study of literature. A large part of credit in English should recognize the pupil's knowing many poems and his ability to read them with understanding and grace.

GENERAL SUMMARY

Only broad principles of study have been treated in this chapter. Details of questions and notes are found in practically all editions of literature used in the high school. There is need, however, to suggest that much of the copying and detailed analysis in literary study is wasteful and boring. It leads to no permanent benefit. It is a mere traditional formalism that wide-awake teachers are forsaking to the vitalizing of their courses and the increasing of enthusiasm for literature. Literature is a form of self-expression and requires not a microscope but a rich experience of living. Its

finest mode of study is sympathy — the power to feel what the author feels. Knowledge of poems, references, fictive characters is practical because enriching one's understanding of life. It is here that supervision of study in literature has its finest opportunity.

CHAPTER XVI

SUPERVISING THE STUDY OF THE FINE AND THE PRACTICAL ARTS

I. THE NATURAL INTEREST IN ART

ONE of the most interesting phases of the emotional life of adolescents is their growing fondness for art, more particularly music, painting, architecture, and drama. One finds here a fascinating blend of individual and sex instincts (if the customary classification may be used). On the one hand, art is a means of self-expression, a form of expression that requires freedom and abandon. The developing individuality must have a wide outlet or means of exercise. The creative instinct asserts the power of the individual to advance beyond his group and higher than the past. It seems that this biological need of self-expression is, moreover, surrounded with pleasurable feelings and results, which stimulate a repetition of endeavor until habits of refined expression have become more permanently fixed. But, on the other hand, this very art-form of the emotional life, at the same time that it serves the individual for himself, tends to make one individual so attractive in skill, appearance, character, or personality that some other individual will desire to possess this superior person. Again, the biological law of repetition appears, but now in the specific, albeit at first vague, tendency to multiply the attrac-

tive individual. And so the sex instinct is affected by the charm of each individual, and in turn reacts on the further refinement of the one who loves or is loved.

The high school, then, faces a double problem at this point. The tendency in some directions is toward repression. Sex, art, fine dress, and amusements are frowned upon as grievous temptations to evil. In other quarters full and free expression under reasonable control (freedom always involves control) is advocated. This policy results in courses on sex hygiene, physical culture, with considerable emphasis on dancing and art in its usual forms of music, painting, and clay or plaster modeling. There can be no question about the high school pupil's preferences in the matter. Lancaster¹ found that of 556 adolescents 464 testified to the "love of music." The author in his investigation of various phases of study in seven high schools of Illinois found that nearly 30 per cent wanted more art and nearly 34 per cent wanted more music in the high school.

II. THE AIM IN STUDYING ART

Artists in various fields have stated extravagantly their conceptions of the value and aim of art. In his delightful series of essays entitled *The Ministry of Art* Dr. Ralph Adams Cram writes:

"If education is the education of all that is best in man, the making possible the realization of all his potentialities, the building up of personality through the dynamic force of the assembled achievements of the human race throughout history, and all toward the end of perfecting sane and righteous and honorable character, then you must make art, so understood and so taught as integral a part of your curriculum as natural science, or mathematics, or

¹ Op. cit.

biology. Not in dynastic mutations, not in the red records of war, not in economic vacillations, or in mechanical achievements, lies the revelation of man in his highest and noblest estate, but in those spiritual adventures, those strivings after the unattainable, those emancipations of the human soul from the hindrance of the material form, which mark the highest points of his rise, presage his final victory, and are recorded and revealed in the art which is their voicing . . . art . . . is neither a commodity nor a wonderful attribute of man who is made in God's image, a subtle language, and a mystery that, in its nature, we may with reverence call sacramental."

This is noble writing and finds reverential amens in the bosom of every artistic nature. It reminds one of the stirring lines of Victor Hugo :

The initiate and the strong alone know the algebra that lurks in music ; genius knows all, and what it does not know it divines, and what it does not divine it invents, and what it does not invent it creates ; and it invents the true and creates the life-like.

When one enters by railroad or boat a community, large or small, the ugly débris, foul odors, blatant misery and corruption everywhere evident or suggested, give birth to the surprise that man's fabulous priced canvasses and marbles in the stately galleries and museums have failed to affect the outskirts, the harbors, the poorer sections of our communities. One finds it very difficult indeed to keep back the judgment that museums of art are the world's crystallized vanity if they serve only for gushing " Ah, how exquisite, how superb," or for more restrained but inactive admiration. This is not the aim of art. Self-expression may lead to a refined individualism, but confined to this narrow circumference art fails to serve society unless its laws and ideals of the harmonious and

the beautiful are made operative in every avenue of social life. In the high school art in all of its branches must function toward the following ends:

1. Appreciation of the fundamental differences between the ugly and the beautiful.
2. The designing of dress, tools, furniture, table service, homes, cities from the standpoint of the simple and the harmonious. This, of course, does not mean an elaborate study of any of these; but courses in domestic science and civics might well consider in some detail how homes should be organized on the principles of art and how cities or towns might be improved in appearance.
3. How to judge a picture, statue, or any work of art.
4. Artistic workmanship in manual training, domestic science, drawing, and painting as well as in music.
5. Pupil coöperation by competition or organization in decorating the school building in and out doors, and as much as feasible the home, church, and community. In some towns cleaning day is supervised by the seniors in the high school.

III. METHODS OF SUPERVISING THE STUDY OF THESE COURSES

The nature of the work in courses dealing with fine arts and the practical arts is fundamentally individual. The laboratory method prevails. Pupils learn by doing and by applying. This fact makes it unnecessary to consider in detail the supervision of study in these subjects. A few suggestions will suffice.

1. **The Method of Application** or the synthetic method is preferable to the more formal or analytic method. The pupil should begin at once to create or to deal with finished products. The learning to play simple selections has displaced the old method of beginning with scales.

2. **Skill through Contact with Life Problems.** If the pupil is working on something that eventually will be his, he will take peculiar pride in producing a creditable performance. His natural instinct of self-expression and ambition will impel him to do his best. For this reason pupils in manual training and domestic science work on things they can use.

Similar motivation is possible in painting, clay modeling, decorations, and music.

3. **School Credit for Private Work.** The movement to recognize the pupil's private lessons in music, painting, elocution, and æsthetic dancing or eurythmics is now well established. The following blanks and directions used by Superintendent Wilson Tout of North Platte, Neb., indicate what can be done in other fields as well.¹

FORM FOR ENROLLMENT

To Any Accredited Teacher of Music:

..... a student in North Platte High School, wishes to take private music lessons on the..... This student will be given high school credit for this work after proper reports have been received from you. It is understood that this permit covers this semester only and is void after one high school credit has been received. Please fill out at once and send by the student, a copy of the Enrollment Blank, and when the 32 lessons have been completed in a satisfactory manner, send a copy of the Credit Blank BY MAIL OR DELIVER IN PERSON. (Never send the credit blank by the student.)

This form is made out by the superintendent or high school principal, after satisfying himself that the student in question has not enrolled for too many other subjects. It is handed to the student who carries it to the teacher who is selected by the student.

¹ *Journal of Education*, October 29, 1914.

FORM OF RETURN SHEET BY THE MUSIC TEACHER

I have enrolled a student in North Platte High School for private music lessons on the This student will take lessons a week, the lessons to be given at (hour) on (days of week) and ... Not more than two lessons a week will be given, each to be of thirty minutes. I am to assume all responsibility for collection of all charges, and in no case will I hold the North Platte City Schools responsible for any amount.

A number of these blanks are furnished to each approved teacher of music. Upon receiving a permit from the school authorities the teacher fills out this blank and sends it to the person who signed the permit.

FORM OF CREDIT SLIP

..... (Student's Name)
..... a student in North Platte High School has taken 32 music lessons on the piano on the dates given below and they have been satisfactory. A grade of has been earned.

1.....	17.....
2.....	18.....
3.....	19.....
4.....	20.....
5.....	21.....
6.....	22.....
7.....	23.....
8.....	24.....
9.....	25.....
10.....	26.....
11.....	27.....
12.....	28.....
13.....	29.....
14.....	30.....
15.....	31.....
16.....	32.....

(This Credit Slip must not be sent by the students, but should be mailed or delivered in person by the teacher.)

These blanks are furnished to the approved teacher of music and upon them the record of the student is kept. After the grade has been earned, this blank properly filled out and signed is sent to the person who signed the permit. This blank is always sent by mail or delivered in person.

Students enrolled in the North Platte High School may receive a maximum of six points credit toward graduation by complying with the following regulations governing credit for vocal or instrumental music.

Rule 1. The Board of Education may accredit teachers of vocal or instrumental music who have shown marked ability as teachers in these special lines. Institutions and schools will not be accredited but only individual teachers of such schools or institutions or individual teachers not connected with such schools or institutions.

Rule 2. Accredited teachers will give standard courses and standard selections for study. The exact course and method of study is left to the individual teacher's judgment, but the Board of Education maintains its right to give examinations to the pupils of teachers suspected of not having a high standard, before giving them credit. Also its certificate of accreditation may be withdrawn from teachers violating any of the regulations herein given covering their work.

Rule 3. Pupils wishing credit in music must select their own teachers from among those approved by the Board of Education and must make all arrangements with them as individuals. Neither the school nor its authorities will make such arrangements nor assume any liability or responsibility whatever. Pupils must pay the teacher directly and not through the school or its authorities.

Rule 4. Not more than two half-hour lessons a week may be given for credit. The lessons may be more than half an hour in length, but not less. When a lesson is missed for any reason, three lessons must not be given during any other week.

Rule 5. Two hours' practice each week day or six hours preparation is required for each lesson. No lesson may be given on the Sabbath.

Rule 6. When a lesson is given it should be marked satisfactory or unsatisfactory by the teacher. Full payment should be demanded in either case. When thirty-two satisfactory lessons have been given, the credit blank (Form 3) should be mailed to the superintendent. This blank should not be given to the pupil to hand to the superintendent. Grades should be marked as follows: A, 95 to 100; B, 90 to 95; C, 85 to 90; D, 80 to 85; E, 75 to 80; F, below 75.

Rule 7. Pupils taking music for credit may be excused from school for two periods required each week, if such periods do not conflict with the regular work of the pupil and if they are approved by the principal of the high school. It is not necessary that school time be used in order to receive credit. Pupils may take music during vacations, but not more than two points credit for music can be entered on the records for any one year.

Rule 8. In order to get one point of high school credit the thirty-two lessons must be taken from the same teacher. Under no conditions will credit be given where a change of teachers is made during the taking of the thirty-two lessons. Teachers must not use substitute when out of the city or when sick or for any other reason.

Rule 9. No credit will be entered for pupils during the year in which they graduate.

4. **Scheme in Junction City, Kan.** A somewhat similar scheme is employed by Superintendent J. W. Shideler of Junction City, Kan.¹

HIGH SCHOOL CREDIT FOR MUSIC STUDY

A bulletin issued by J. W. Shideler, superintendent of the Junction City, Kan., public schools, announces that high school pupils

¹ *School Review*, November, 1913.

taking music outside of school are given credit. One unit a year is granted on the basis of thirty-two credits for graduation. The requirements are as follows:

1. For instrumental music (piano), the following points will be emphasized: (a) bodily poise — position of hands, (b) correct rhythm, (c) tone coloring, (d) correct pedaling, (e) phrasing, (f) expression. (Violin) omit latter part of (a) and (d) and substitute correct handling of bow.

2. For voice culture: (a) vocal poise, (b) tone quality, (c) tone placement, (d) articulation, (e) pronunciation, (f) smoothness of vocalization, (g) phrasing, (h) expression, (i) interpretation.

3. Application for such credit must be made by parent and must be accompanied by written recommendation of private teacher.

4. No pupil will be accepted who takes fewer than one lesson a week and practices fewer than six hours a week.

5. The teacher must report to the superintendent the first of the following months: October, December, February, April, and May 15, the character and grade of the work, the progress made by the pupil since the preceding report, and the compositions studied with remarks concerning the scope and quality of the work done on each composition. The teacher will report a grade in per cent on the basis of 75 per cent for passing work. These reports are to be made in duplicate, one signed and one unsigned.

6. The parent will report to the superintendent the first of every month the number of hours of practice of the pupil.

7. The pupil will be required to pass an examination at the close of the year, under a board of examiners appointed by the superintendent. The examination will be planned on the basis of the unsigned reports of the teacher.

5. **Plan in Bristol, Conn.** In Bristol, Conn., pupils are permitted to substitute music, either instrumental, vocal, or theoretical, for a high school study. Plans of administration like the foregoing are employed.

6. Suggestions for organizing Courses in Art. *a. A study of the structure* of instruments like violin, piano, organ, and cornet would add to the attractiveness of courses in physics or general science.

b. The principles of organizing glee clubs, mixed choirs, quartets, orchestras, and bands would be valuable units in music courses.

c. The meaning of good music (illustrated) and poor music. It should be noted in this connection that all ragtime is not trashy and all so-called classical music is not superior to modern light operas.

d. Accuracy, neatness, speed, originality, judgment, and perseverance should be noted in all courses.

e. Note individual peculiarities in the matter of vision, hearing, dexterity, organization.

f. Give assignments in program making, hanging of pictures (the small reprints will do just as well), arrangement of furniture and bric-a-brac at home and in offices so that art may serve efficiency.

g. Explain the psychology of dress in its relation to physique, complexion, color scheme of drawing-room. (For example, a pink dress against a dark red background is displeasing. Blondes should not dress in brown. Brunettes should not wear cerise.)

h. Cultivate in the pupils respect for art as practical knowledge. Avoid, therefore, extravagant praise of objects studied; shun the popular conception of the artist in mannerism and extreme novelty of dress.

i. Art should be treated as seriously as any other subject. Its teachers should be selected for their training and controlled enthusiasm. Avoid the excessively emotional type.

GENERAL SUMMARY

The artistic attitude may be unaccompanied by any specific talent for definite artistic performance; but it is fair to the pupils to give every one an opportunity to ascertain his fitness for artistic achievement. The pupil's social life is greatly improved by his ability in artistic performance of some kind. Vocational success may result from the arousal of interest in art during high school years. Supervision should aim at large views of art and a practical application of it from week to week. Mere formal exercises in drawing, carpentering, sewing, or even playing will fail to supply motivation. L. R. Alderman's scheme of school credit for home work will prove helpful in enlarging the field of application. Art should be treated as a serious form of living and not as a hyper-sentimental gush of ecstasy. A study of the Roycroft movement at East Aurora, N.Y., would be invaluable as a financially successful attempt to make art vital and life artistic.

PART III

CHAPTER XVII

THE EFFECTIVENESS OF SUPERVISED STUDY

I. MEASURED RESULTS OF SUPERVISED STUDY

1. **Symposium at Columbia University.** Unfortunately it is difficult to find teachers and principals who have kept adequate records of the results of this new type of class management. There are a few, however, who in various ways have indicated what they regard as worthwhile results. Some of these will now be referred to. In the summer of 1912 while teaching at the Summer School of Columbia University, Dr. Charles Hughes Johnston found opportunity to get from several high school principals reactions on this method of teaching. A composite list of these reactions from principals who had had some experiences with the method is as follows: (1) it saves time; (2) prevents waste of energy; (3) makes for definiteness; (4) allows leisure for extra school work, family life, athletics, music, art, reading, social and religious activities without neglecting school work; (5) teaches children how to use their minds; (6) gives pupils a working day the same as people generally have; (7) aids discipline by keeping the child active all the time; (8) reduces the reiteration plan of recitation to a minimum; (9) makes the classroom a live workshop; (10) inspires pupils to study because they know how; (11) provides an atmosphere of study — everybody's

doing it; (12) brings about a better mutual understanding between teacher and individual pupil; (13) because of better prepared lessons it relieves the teacher of the sense of failure in her teaching; (14) reduces the amount of home study in the grades and the first two years of high school.

2. **Results obtained at Trenton, N.J.** H. E. Webb in *The Pivot*, published by the Central High School of Trenton, N.J., writes of the general results of the directed study period in that school. Briefly summarized his comments are as follows: (a) Earnest, sincere students now had the chance they had long deserved and were given the first place in the teacher's attention regardless of their innate abilities. (b) Idlers showed their character very quickly and no amount of smartness could conceal it. The great majority of them, therefore, set about to change it by the simple expedient of going to work. (c) A large number of idlers went to work during the study conference because there was nothing else to do and supervised themselves by finding that they enjoyed it. (d) Teachers found the character of the other part of the period (the method in this school is the divided recitation period already referred to) changing, owing to their better acquaintance with their pupils and the fact that the general policy of the school is one of helpfulness rather than of repression. (e) Students were not slow to appreciate that with the teacher at hand to help over the hard places it was well worth while to concentrate on one study at a time and to economize the classroom hour to the utmost.

3. **The Newark Results.** Mr. Wiener, in his chapter in *The Modern High School*, by Johnston and others, cites several tables indicating the benefits of the divided period. The teacher who promoted the fewest pupils did not use super-

vised study at all. Those who used it only indifferently had average results, whereas the teachers who emphasized supervised study had the best promotion records.

TABLE XXI. — TABLES OF TOTALS FOR ENGLISH

NAME OF TEACHERS	NO. ON ROLL	NO. PROMOTED	PER CENT
Alden	174	154	88.5
Goldstein	185	157	84.8
Snodgrass	199	182	91.4
Holt	24	24	100.0
Denton	24	17	70.8
Rich	199	125	62.8
Muhlman	189	147	74.4
Herzberg	168	155	92.2

The general tendency of tables indicating results in other subjects is the same. It will be noted that classes not having supervised study achieved 62.8 and 74.4 per cent of promotions. The enrollments here given are totals of all the classes taught by each teacher named.

4. **Results in Joliet, Ill.** So far as the writer knows, the most elaborate employment of supervised study is found in the high school of Joliet, Ill., where the double period is in vogue for the first two years in the high school. In the recent article in *School and Home Education* for February, Dr. J. Stanley Brown, the principal of this school, writes :

"I have kept for the past ten semesters the percentage of failure in the various subjects taught by the various teachers. Every teacher is required to make a report at the close of the semester showing these things in every class, viz.: the number originally enrolled in the class; the number in the class at the close of the semester; the number passed at the close of the semester; the number failed with the names of each and the cause of the failure; the number dropped with cause stated for dropping.

A tabulation is made of all these teachers' reports at the close of the semester and opportunity is given for comparing one semester's work with another for the past four or five years. The past semester which ended in June, 1914, showed thirty-eight different classes in which there were no failures. It showed further that the percentage of failures is gradually being reduced to a minimum. For us an average minimum will be from ten to thirteen per cent. There will be an occasional class that will run very much higher, but a very much larger number that will run very much lower."

Last spring Dr. Brown gave the writer the following table which illustrates the reference made in the foregoing quotation.

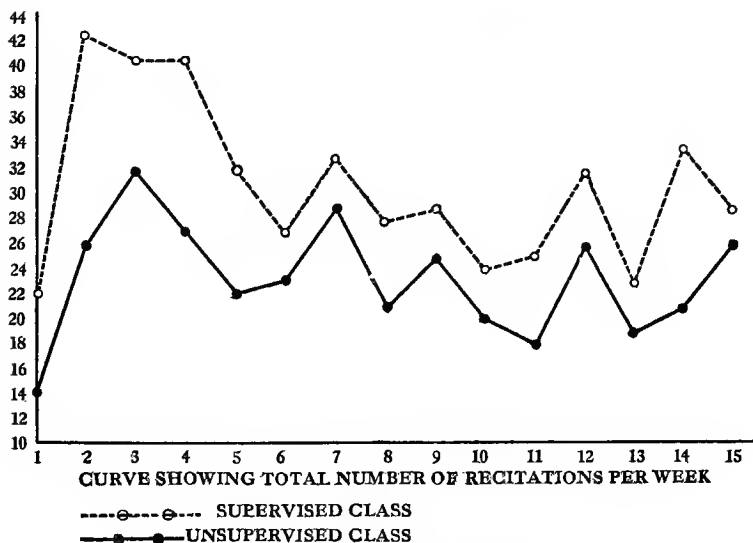
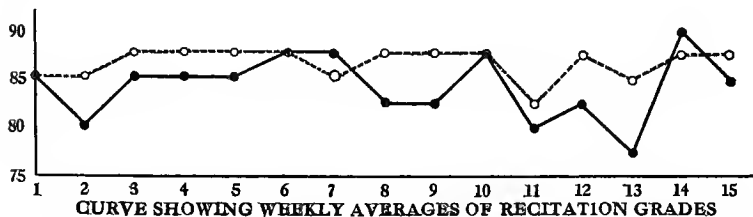
TABLE XXII.—TABLE OF PERCENTAGE OF FAILURES

SUBJECT	1911	1912	1913	1914
Algebra	24	22	15	12
Arithmetic	26	20	12	13
Geometry	29	19	17	16
German	21	20	13	14
Latin	22	19	16	13
French	10	9	8	9
Physiography	12	10	8	9

It will be noted from this table that there is a consistent decrease of failures from 1911 to 1914. The few exceptions are due to conditions that must be contended with in connection with every method; for example, the general ability of the entire class, some classes having a higher general efficiency than others. From his own observations of the method at work in the Joliet High School, the writer can bear witness to the general workableness of the scheme. All the teachers with whom the writer spoke were in hearty accord with the method.

5. **Results by Mr. J. H. Minnick of Bloomington, Ind.** Mr. Minnick performed an interesting experiment in super-

vised study with results confirming in substance those already cited.¹ Selecting 60 pupils from classes beginning plane geometry, Mr. Minnick drew at random thirty-six names and divided these thirty-six pupils, giving one division supervised study and the other remaining unsupervised. The following curves show the results as explained.



¹ See *School Review*, December, 1913.

In addition to the foregoing curves the following table of results in examinations is suggestive.

TABLE XXIII.—RESULTS IN EXAMINATIONS

KIND OF EXAMINATION	No. OF EXAMINATIONS	AVERAGE OF CLASS		AVERAGE NUMBER SOLVED	
		Supervised	Unsupervised	Supervised	Unsupervised
Six-weeksexaminations.	$\left\{ \begin{array}{l} 1 \\ 2 \end{array} \right.$	77.3 81.2	68.7 80.4	4.2 4.3	3.55 3.9
Final examination . .	1	92.4	80.1	12.7	12.2
Tests consisting of new materials	$\left\{ \begin{array}{l} 1 \\ 2 \\ 3 \\ 4 \end{array} \right.$	82.4 87.3 77.6 82.8	73.9 70.2 56.2 77.3	4.8 4.8 2.1 4.2	4.4 3.7 2.1 3.8

6. Results by Breslich in Chicago. Clearly supervised study works in the cases cited. Additional evidence is furnished by Mr. Breslich of the Department of Mathematics in the University High School, University of Chicago.¹ Two classes in algebra were tested. Section A was assigned the usual home work and no supervised study was given; Section B was taught how to study and was not given any home work. Both sections were given the same lessons. The result of the same test given to both sections at the close of the experiment is as follows: Section A, 62.8; Section B, 65.5. The preceding semester when no supervised study was offered to any classes, Section B had an average of 79.4 and Section A 81.4. By supervised study Section B gained over Section A. The lower averages were due to the greater difficulty of the subject matter. In the next chapter studied the order was again reversed. Section A was given supervised study and Section B the usual home work. In the test given both sections A aver-

¹ See *School Review*, Vol. XX, pp. 505-515.

aged 77.5, a considerable gain over 62.8, and B averaged 86.4, breaking its own record and gaining over A. The supervised study work given B before still persisted from the preceding chapter's work.

7. **The Pottstown, Pa., Results.** Mr. L. Loveland submits the following table which clearly shows that supervised study has benefited the pupils in this high school. There is a normal decrease of failures. One must, of course, make due allowance for change of teachers and the difficulty of the subject.

TABLE XXIV.—PROGRESS OF PUPILS BY AID OF SUPERVISED STUDY

YEAR	NO. PASSED	NO. NON-PROMOTIONS	NO. ELIMINATED
1909-10	303	26 7+ %	74 18 %
1910-11	292	17 6- %	68 17 %
1911-12	277	19 6+ %	54 15 %
1912-13	219	27 8- %	54 13 %
1913-14	288	26 8+ %	60 16 %
1914-15	324	19 6- %	43 12 %

8. **Pueblo, Col.** In the high school (district No. 20) of this city conditions in junior algebra were far from ideal according to statements by the principal in 1913. Supervised study was introduced as an experiment. The results proved very gratifying. "How those classes have 'dug' during the forty-five minute period. The tests have been passed by a considerably higher percentage of the classes than ever before, and, in addition to the getting of the work in algebra, they have been acquiring the habit of concentrated study."

9. **Cairo, Ill.** In the high school of this city supervised study occupies a prominent place in every subject. The eclectic plan is followed. The following table shows results that justify the amount of time devoted to this type of supervision.

TABLE XXV. — RESULTS OF SUPERVISED STUDY AT CAIRO, ILL.

YEAR	ENG. I	ENG. II	ENG. III	ENG. IV	LATIN I	LATIN II	LATIN III	LATIN IV	GER. I	GER. II	ZOOLOGY
1912-13	89	7 .08	78 15 .19	44 7 .15	25 2 .03	58 19 .33	25 7 .28	17 0 .13	0 36 .16	0 9 0	0 8 0
1913-14	89	0 .06	1 1 .01	43 0 .02	9 29 .03	36 4 .33	12 0 .00	0 0 .00	28 5 .17	19 0 6	0 0 0

YEAR	PHYSIOG.	PHYSICS	ALGEBRA I	ALGEBRA II	GEOMETRY	ANC. HIST.	ENG. HIST.	AMER. HIST.	ECONOMICS	BOOKKEEP- ING I
1912-13	8 1 .02	12 0 0	108 30 .28	29 2 .07	34 5 .19	55 11 .20	12 15 .24	25 0 0	13 0 0	90 23 .25
1913-14	12 0 0	11 0 0	64 15 .23	16 3 .18	26 0 0	43 7 .16	59 3 .05	29 0 0	19 1 .05	47 0 0

YEAR	BOOKKEEP- ING II		SPELLING		STENO. I		STENO. II		TYPEWR.		SEWING		COOKING		8TH-GRADE COOKING		MANUAL TRAINING		8TH-GRADE MAN. TR.	
1912-13	33	6 .18	107	39 .36	25	6 .24	9	12 .22	27	1 .03	41	4 .09	9	0 0	45	0 0	25	5 .2	48	0 0
1913-14	36	1 .02	55	15 .28	26	0 0	12	0 0	37	0 0	37	2 .05	15	0 0	52	0 0	21	0 0	51	0 0

The first column under each subject contains the enrollment, the second column the number of failures, and the third column the per cent failing. The second row (1913-14) records the work done under supervised study.

10. **Results by Rickard in Oakland City, Ind.** "The pupils' methods of study were ranked into three groups on the basis of efficient methods of procedure, the third of the pupils having the best methods were put into group one, those having the poorest methods into group three. I then asked the classroom teachers to group the pupils similar on the basis of their class standing, I was not to see this latter grouping until I had completed my grouping. I then compared the groups to find the extent of which the pupils grouped in the first third on the basis of class standing were retained in the same third on the basis of methods of study." A summary of results is as follows:

TABLE XXVI. — PROGRESS OF PUPILS IN HISTORY

Remaining in same textile . . .	48.9	56	37.2	35
Deviating one textile	28.5	25	30.05	40
Deviating more than one textile .	19.5	15	27.6	20

Rickard says: "The practical implication of these data is that pupils stand well in a subject in proportion to the extent to which they are explicitly conscious of methods of study for that subject. This fact was still further demonstrated by an experiment conducted in this school in 1913 by which the half of the class having the lowest standing when subjected to supervised study, and made explicitly conscious of methods of study in history, improved rapidly in ranking and grades; while a group of equal ranking and grades was allowed to proceed in the usual manner gained nothing in ranking. We can afford to take time to make our pupils explicitly conscious of the methods of study. We can't do this sort of teaching to large groups, I have tried and failed. The pupil must have a chance to react immediately to your suggestions."

II. THE TEACHER'S PREPARATION

In concluding this detailed discussion of supervised study, the final word must be devoted to the teacher. The best of plans must fail unless they are directed by persons who have enthusiastic faith in their ultimate success. If teachers are unwilling to change their attitude and their methods, tons of books and years of discussion avail nothing. The efficiency of our public school system rests chiefly on the teachers who have caught the vision of their work as the noblest and most dignified of professions. The slurs of "school marm" or "pedagogue" will disappear only when the unfortunate reality responsible for them has been transformed into the pride of American democracy by each teacher adding his or her contribution of genuine professional service. There are thousands of teachers to-day who are doing valiant work; teachers whose classrooms are charged with the glorious excitement of developing individuals. We gladly salute in highest esteem these ladies and gentlemen for whom scholarship is the hope of a finer civilization, and in whom glows the friendship of youth.

One may deplore the shifting habitats of teachers, and attempt to block Cupid's enterprising inroads, but these are not fundamental problems. A well-trained, ingenious teacher can stay one or two years in a school and work so systematically and efficiently that succeeding teachers need find no difficulty in continuing the work along similar lines if they are equally well trained. The training provided by Schools of Education is becoming yearly more comprehensive; but superintendents and principals face the practical, local problem of adjusting new teachers to old conditions and experienced teachers to

new points of view. It is a problem of continuous training — a training in service that confronts the school administrator. Reading circles, summer schools, travel, etc., are common means in solving this problem. But beyond all this we must reach the professional conscience and tap the well of intelligent enthusiasm in each teacher. Until this is effected, training agencies are mere formalism.

Perhaps the solution is one of individual treatment of teachers themselves. The teacher can be encouraged, developed, and trained by friendly supervision and tactful criticism. More publicity should be given to their successful efforts. Greater recognition should be given them by name in local papers and school reports. The personality of the teacher should not be submerged beneath the impersonal designation “work in our history courses is very successful”; “progress in mathematics is hopeful”; “there is marked improvement in Latin.” That finer compliment of mentioning the name of the teacher together with her place in the school system is not only fair; it has a practical result in constraining the teacher to make her name even more representative of success. What is needed all along the line in American education is respect of persons — both teachers and pupils. The deadening routine of system must be revived by recognizing *individuals* in the system. Education, let us hope, is not a soulless corporation but a spiritual coöperation in which the enthusiasm, individuality, and ambition of each member of the school organization becomes a vital part of the whole.

Rickard's Directions to Teachers. Mr. Rickard appreciated this need in dealing with his teachers as study supervisors. Extracts from his *Directions to Teachers* should be emulated by other principals:

It is frequently and fairly urged that high school teachers do not know how to teach methods of study, that they are so engrossed in subject matter that they are not concerned with how it is gotten. It is my observation that high school teachers do not know how to teach studying, because they have never been made explicitly conscious of the problem, nor have they received any training in that method of approach. Their teachers did not approach methods of study as a problem. We need a practicum of study supervision. In the hopes of giving you some actual practice in the supervision of study this synopsis of study supervision is offered. These suggestions are not to be regarded as final and authoritative. They may be modified as we gain greater insight into our problems: but they give us a chance to do something.

To my mind the high school teacher should see this problem from three angles, as a classroom teacher of a subject, as an assembly, or study hall supervisor, and as a member of a faculty interested in our pupils' welfare in a general administrative way. What shall we do by way of supervising study from each of these three angles?

AS A CLASSROOM TEACHER OF A SUBJECT

1. Make definite assignments — the sort which looks consciously backward toward the larger unity in which it is held, and forward toward new points of application. The pupil should know definitely what is expected of him, and should be held closely for such preparation. Assignments may well take the form of suggestive questions. They should be in terms of *methods of procedure*, that is, the pupils should bring to class some tangible evidence of reaction to the assignment, even though it be merely a tabulator statement of the dates, kings, and chief events for a chapter of English History.

2. Reward good study habits by some sort of recognition — allowing a pupil the chance to give the class the results of his prep-

aration may be a sufficient reward. Allowing a pupil the chance to elaborate his prepared material in considerable detail may for him be pleasurable enough to induce future reactions of the same sort.

3. Realize that pupils must have the will to learn. We can induce this attitude only by the skillful use of incentives. What has been said immediately above is applicable here. Remember that all organisms reach out after more of pleasurable types of experience. The organisms before us are not exceptions. Can you cause a boy to "feel good" because he has prepared a lesson well?

4. Talk with pupils of the difficulties of their assignments, of their methods of study. Count that day lost on which you do not gain some insight into your pupils' mental processes. The lawyers say that a "meeting of minds" is necessary to a contract; both parties must understand each other. Many a high school pupil gets a good many things he doesn't contract for, and many a high school teacher thinks he has contracted for a good many things he never gets, because there is no "meeting of minds."

5. Think through difficult subject matter with your pupils. Let them see your mental processes in action. Don't be afraid to think out loud. Try to recall the mental steps by which you reach conclusions. In former days apprentices learned their crafts by watching master craftsmen at work. Let your pupils get intimate insights into the mental steps by which you proceed to write a composition, or set up an experiment, or journalize a bookkeeping entry. The pupil will imitate your thinking, even unconsciously, far more than you think.

6. Try to find the methods of study peculiar to your particular subject. There are certain general methods fundamental to many subjects, but these are modified in a specialized adaption to a specific content.

AS ASSEMBLY ROOM TEACHERS

1. See that pupils assume the physical attitude of study. This means quite independent work, absence of distracting influences; the presence of the necessary equipment, pens, rulers, compasses, etc. If a pupil refuses persistently to assume such an attitude, he should be remanded to the office for special treatment.

2. Recognize the efficient student. One very obvious fact is that a pupil may assume the physical attitude of study and lack the proper mental attitude. Here is where our incentives should function. If they do not, our skill has failed. Having the assembly supervisor recognize him as an efficient student is powerful incentive.

3. Pupils should not be allowed to diffuse their energy over several subjects in one period, but attention should be focused on one. The tendency of children is to be intermittent in their behavior. This means that we must enforce, from day to day, attention to a particular subject at a particular time, if we mean for such attention to come to function as a habit. Have an assembly roll with the subject the pupil is to study set opposite his name. This roll can be drawn up to correspond to the rows in which the pupils are seated. Then the teacher can, by passing down the aisles quickly, see that a pupil is studying the subject called for on his program. Soon the habit becomes fixed for the pupil of attending to a particular subject at that time, or at least allowing it the right of way. Moreover, an assembly tends to fall into planes of uniformity; for example, the ninety-three people will be studying Latin during your assembly charge. This simplifies the supervision, and makes for efficiency of procedure from the standpoint of both the student and teacher. But it will not take care of itself. The supervisor must take pains to see that he gets the desired reactions. No plan will work itself, but is merely a mode of procedure by which the personality and skill of the teacher may work effectively.

4. If there is considerable disturbance in the preparation of an

assignment, report the same to the classroom teacher. There is probably a reason which he should know of.

5. Realize that time spent in the supervision of study is capital productively invested. It is not an added burden; it is an investment for the future. The rate of interest is high: more rapid advance through subject matter, few failures, livelier interest, freedom from the annoying disturbance of those who don't know what to do, consequently better discipline.

AS A MEMBER OF THE FACULTY

As a member of the faculty you should know the following facts which effect the general administrative situation. These facts emerge from the analysis of a considerable body of data.

1. Girls have a wider range of well-established study than boys. In this system the average girl studies twenty-seven minutes more each day than the average boy. Failures are only about one third as frequent among the girls as among the boys. There is practically no difference between the sexes with regard to certain social conditions which might affect study. No one method of study is popular with one sex to the exclusion of the other.

2. Where teachers insist on a particular method of study, that fact tends to appear in any statistical inquiry and analysis.

3. Time spent in study does not increase in regular proportion from year to year, but is dependent upon the peculiarities of the specific subject matter.

4. There is an excessive number of failures in mathematics for both sexes. In general that subject requires an excessive amount of time and preparation, while English occupies the least.

5. A forty-minute period is not sufficient for the preparation of a lesson except in a few cases under our present régime. Ultimately this will mean a lengthening of the school day, shortening of assignments and ground covered, or the devising of more efficient methods of study.

GENERAL CONCLUSION

The various departments of supervised study in this discussion have aimed to illustrate the conception stated in the opening chapter that supervised study is that plan of school procedure whereby each pupil is so adequately instructed and directed in the methods of studying and thinking that his daily preparation will progress under conditions most favorable to a hygienic, economical, and self-reliant career of intellectual endeavor. Practical illustrations taken from schools where the methods are successfully employed have been multiplied throughout the book. To the extent permitted by its present status the aim has been to reflect in these pages the practicability of the method. Evidence from schoolmen has been presented. Theory has been avoided as much as possible. Scientific results have been cited. No teacher need hesitate to adopt the method in some form if she or he is willing to observe its detailed procedure and to regard teaching as *fundamentally* a directing of the pupil's habits of study. This finer attitude on the part of the teacher will bring into fresh review the memories of the great teachers ago — teachers great because they inspired, immortal because their inspiration aimed at individuals who in the glow and in the power of this inspiration were led step by step to the realm of independent thought whence they in turn could lift mankind a little nearer the Gloriously Unattainable. What they did teachers can do in this day of scientific supervision and direction of study.

APPENDIX

REPORT BY THIRD ASSISTANT E. E. SMITH

BAINBRIDGE SCHOOL, RICHMOND, VIRGINIA

INTRODUCTORY

THE Bainbridge school is both an Intermediate and Junior High School. There are 300 pupils in the former and 400 in the latter. In addition there are three rooms used for special classes.

Both schools are operated on the same schedule, the Intermediate School, consisting of fifth grades only, having eight periods per day instead of nine as in the Junior High. Departmental work is given in both schools.

NOTE: The Primary schools have the following grades: 1A, 1B, 1C, 2A, 2B, 3A, 3B, 4A, and 4B.

THE INTERMEDIATE SCHOOL

The Intermediate School consists of five 5A grades and three 5B grades. It receives all the fifth grade pupils of South Richmond and is fed by three schools, Powhatan, Oak Grove, and Franklin.

The grades are arranged and named as follows: 5A₁, 5A₂, 5A₃, 5A₄, 5A₅, and 5B₁, 5B₂, 5B₃. The 5A₁ grade is much better than the 5A₅ grade, and the 5A₂ is better than the 5A₃, and so on. The pupils were originally distributed and arranged in this order according to standard tests in arithmetic, language,

spelling, and reading. The distribution is very satisfactory both from the teacher's standpoint and from the supervisor's. In fact, any one competent to judge of the matter can easily detect the difference in ability between any two of the classes.

Each of these grades is, in turn, grouped according to attainment in EACH SUBJECT. Individuals are promoted at any time in any subject from one group within a grade or from the fast group of one grade to the slow group of another. In other words, pupils climb by groups.

THE JUNIOR HIGH SCHOOL

The Junior High School consists of twelve grades named as follows: 1A1, 1A2, 1A3, 1B1, 1B2, 2A1, 2A2, 2A3, 2B1, 2B2, 3A1, 3A2. (The 3A's will become 3B's in February, and will be completing the last term before entering the Senior High School of three years.)

Pupils are placed in the classes named above according to the *elective subjects* that they have chosen. For instance, the elective subjects in the 1A grade are Elementary Science, French, German, Spanish, Latin, and Practical English. Pupils may select one of these. Accordingly, those who select one of the modern languages are placed in the 1A1 grade, those who select Elementary Science or Latin are placed in the 1A2, and those who select Practical English are placed in the 1A3. Hence classes are arranged, as has been said, according to the elective subjects.

Each of these grades is grouped according to attainment in each subject in the grade. Pupils are promoted from one group to another within the grade.

THE DIFFERENCE BETWEEN THE TWO

Due to the fact that the Intermediate Classes are arranged according to ability and the Junior High School Classes according

to the subjects chosen, there is some variation in the way in which supervised study is conducted. The essential difference, however, lies in the fact that a pupil in the Intermediate School who is making great progress in one study or more studies can advance from one grade to another, climbing by groups across grade lines. The Junior High School pupil, on the other hand, goes on in the grade by groups, but finds that he cannot cross the grade line because he is limited by his elective subject. Therefore, if such a thing can be said, it is even more imperative that there should be more direction of pupils under supervision in the Junior High School than in the Intermediate School in order that this deficiency may be overcome, even though it is in a measure overcome by the fact that the subject matter becomes more difficult as the child advances; and yet even this may not help to overcome it but may retard it.

METHOD IN BOTH SCHOOLS

As has been said, all classes are arranged in groups.¹ The number of groups is assumed to be two. Group I, however, is of course distributed between limits and group II is also distributed between limits. The best pupils of group I are not equal in advancement to the slower pupils of group II. Transfers occur at any time. Group work in the class should be evident at a glance even to the casual observer.

It is assumed that there is universal teaching according to the problem or laboratory method, and that these problems are submitted to the supervisors so that they may be passed on as to whether they are social questions and not merely easy or difficult questions according to the generally accepted meaning of this

¹This grouping is not to be confused with the three-group plan which follows in the Junior High School. The former are arranged according to attainment and intelligence, while the latter are distributed for purposes of administration and study organization for the thirty-minute periods.

work. It is also necessary that bibliography, seat work, and definitely outlined policies of what will be done in the consideration of each problem by the pupils be given so that they may be guided in obtaining knowledge and in learning how to get information.

Not only do pupils work in groups, but they report to the members of the group by talking to them and not to the teachers. In making such reports and talks, it is a constant aim to develop in the children an increasing ability to stand and talk well to others who are interested in what is being said. In addition, rivalry between groups often becomes acute, and the attainment of the entire social body is thereby raised.

In other words, teachers are active in directing study and assignments; children are active in studying and getting knowledge. Each are active in coöperation, the lion's share of talking really falling to the pupils.

It is necessary that every teacher, or practically every one, be able to teach the mother tongue. Plans are now on foot to require almost every teacher to teach some branch of English to the pupils of his home room. The reason for this statement is the fact that, if pupils must make more or less extended reports to groups and must write about this, that, and the other subject or activity, then the process is one which involves the use of English. In other words, functional grammar, language, spelling, and the like is an essential method in these schools, and the field of English extends into all the studies and all the activities; and proper and wise guidance is necessary.

Space will not permit a report on the methods used in each subject of the curriculum. There is, however, a necessary differentiation of methods according to subjects. Supervised study in English must differ from supervision in algebra and the various sciences.

THE DAILY SCHEDULE OF CLASSES

There are eight periods per day for the Intermediate School, and nine periods for the Junior High School. The former closes formally at 2.56 P.M. and the latter at 3.30. The periods are arranged as follows:

1st period	9.00 to 9.40 (40 min.)
2nd period	9.43 to 10.23 (40 min.)
3rd period	10.26 to 10.56 (30 min.)
4th period	11.00 to 11.40 (40 min.)
Recess	11.43 to 12.13
5th period	12.17 to 12.57 (40 min.)
6th period	1.00 to 1.40 (40 min.)
7th period	1.43 to 2.13 (30 min.)
8th period	2.16 to 2.56 (40 min.)
9th period	3.00 to 3.30 (30 min.)

Summary: Six forty-minute periods.

Three thirty-minute periods.¹

One thirty-minute recess.

Eight three-minute changes or 24 minutes in all.

THE FORTY-MINUTE PERIODS

Teachers are required to observe the following distribution of time relative to the forty-minute periods: there must be enough time allowed for supervision of study, and it is assumed that at least one half of the entire time should be devoted to this. Teachers are not required, however, to supervise study for twenty minutes during each period, but are required to supervise study for approximately 100 minutes per week, distributing this time where it is most effective.

¹The Intermediate School has two thirty-minute periods instead of three.

The time that is left is devoted to (a) assignments and (b) recitations. The approximate 100 minutes which remain are used for these activities, and this time may be distributed according to the nature of the problem that the class or groups are attacking.

THE THIRTY-MINUTE PERIODS

These periods may be termed the supervised study periods proper. Pupils are privileged during these half hours to do a number of things or to pursue one of a choice of activities connected with studying or educating themselves.

The schedule for the third and seventh periods is changed each month so that the classes or groups may be supervised by the teachers who teach them. The wants and needs of the class as a whole are determined by the teachers, and then the classes are distributed monthly according to the needs of the majority. Nor do the pupils of these classes study under the same teacher each day in the week, unless there is great demand for such a procedure. In some cases one teacher may receive the class two days out of the week. In the majority of cases, however, the schedule of any one pupil is probably different for each day in the week, duplications probably occurring in the *third and seventh periods* but hardly in either the third or seventh. By this means, practically all the teachers of any one grade supervise the pupils during one of the thirty-minute periods in the week.

To illustrate, let us assume that the 1A1 grade, in room number 13, is studying arithmetic during the third period on Monday. At the same time English Literature, Composition and Grammar, and United States History are being supervised in the other 1A grades. Geography and Elementary Science are being supervised by the teachers of the 1A groups, but they are conducting study in the 2A1 and 2B2 grades respectively. Practically every teacher is available in some room in the building to the second and third group mentioned below. Then we may diagram this as follows:

GROUP-----

1. Study Arithmetic

- | | | | | |
|---|--------|---|--------|--|
| 2. Study any sub-
ject in room
13 | } or { | Study arithmetic for
maximum attain-
ment | } or { | Select a subject
and go to the
teacher of it |
| 3. Select a subject
and go to the
teacher of it | } or { | Study arithmetic for
maximum attain-
ment | } or { | Study any sub-
ject in room
13 |

It will be noted from the above,

(1) This subject (Arithmetic) is studied on Monday. Others may find a place on the following days of the week. Hence the possibilities for studying at this period for the entire semester is very great.

(2) The above groups are variable during or at the end of any month.

(3) That a check is necessary for groups II and III. This is done by consultation of the teacher of arithmetic and the pupils (or any pupil) with any of the other teachers who may be concerned and then *in turn* between the subject teachers and the teacher of arithmetic whenever "returns" are necessary. In other words, the arithmetic teacher is responsible for the 1A1 pupils in room 13 on Monday of each week.

(4) While a schedule is maintained, nevertheless there is much flexibility. In the first place, pupils who are deficient in subjects are provided for a time to study these. In the second place, pupils who are not deficient may confer and be guided in selecting what subjects they wish to study. The limitations to the fact that they will be able to study the subject they select *under supervision* are forced only by the number of vacant seats with the subject teacher chosen. It will be noted that, in any case, they may *study the subject they want* for they may remain in room 13. However, in the great majority of cases, trading is successfully effected.

(5) Teachers have an excellent opportunity during this period to get into close touch with the pupils. Heart-to-heart talks bring out the difficulties that pupils meet in their school life, and many pupils can be guided in a wise choice of meeting these trials and difficulties.

(6) Group 1 consists of those who are greatly in need of improvement; group 2 of those who may or may not need improvement in the subject of arithmetic; and group 3 consists of those who are proficient. Below 75%, so far as "grades" are concerned, is considered deficient. Heart-to-heart talks often reveal the fact that proficiency is maintained at great expenditure of energy, and they result in giving the ways and means of economizing time and energy. It is found that mere "marks" do not always tell the whole story of one's struggles.

(7) By means of the entire plan of supervised study (including both forty-minute and thirty-minute periods), pupils have the opportunity of doing practically all their studying in school under supervision of the teacher of the subject. Home study can then be used for reading or getting supplementary material, or preparing special reports and the like.

THE NINTH PERIOD

During the ninth period all who may so elect may remain. In addition, all pupils who are in need of assistance on any subject remain to study this subject. Usually, all pupils who have a grade below 75% on any subject at the time the period is held are required to report to the teacher of this subject.

All pupils report to their home rooms at the ninth period each day. Those whose school work warrant it may leave when the bell rings. Then the home room teacher directs the remaining pupils to the necessary subject teachers. Then, when any pupil shall have "worked up" on the subject, he is sent back to the home room teacher, who may or may not require him to "work up" on

another subject. Of course, the home room teacher cannot arbitrarily dictate to each and all pupils, but is guided by the record of the pupils from many teachers.

The scheme is identical for each day of the entire semester. It is interesting to note how the number of pupils who have to remain decrease in number from week to week and from day to day. It is also interesting to note the eager pupils seeking further help, although apparently proficient on all subjects.

THE SOCIAL OR EXTRA-CURRICULUM HOUR

A graphical explanation of the third study period for the 1A1 grade has been given above. The following representation is for the same grade, on the same day, Monday, but during the *seventh* period when this grade is in room 18 with the literature teacher.

This scheme holds good for only two days in the week at present — Mondays and Wednesdays. Otherwise, the seventh period is operated just as was explained for the third period above. It will be noticed in that explanation that six studies were being supervised for the 1A grade pupils, while the 1A1 class was studying arithmetic. Now three of these teachers, — those of geography, arithmetic, and elementary science, — because of talents and training that enable them to meet pupils in an informal or social way, give their time to developing in the children who wish it varied expression in

Instrumental music,
Drawing or painting,
Folk-dancing and the like, or
Baloptican depicting selected scenes, etc.

There is no formal *instruction* but informal *expression* during these two half hours.

These extra-curriculum or social courses are open to pupils of groups 2 and 3 as referred to above, and any 15 pupils who ask for

any kind of legitimate educational enjoyment are given it, if it can possibly be provided.

Classes are, as before, distributed for group supervision by monthly schedule, each assignment of classes to each teacher for each day in the week being determined, as far as possible, by the wants and needs of the majority of the pupils in the class or by the needs of group 1. With the slight, but most important variation in regard to the extra-curriculum courses, the scheme for the seventh period is identical in nature with that of the third period, the variables, of course, being the *room* and *subject* chosen by the children. In the explanation above, the extra-curriculum activities simply replace studying lessons.

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INDEX

- Abbreviations, 189.
- Abstract conceptions, 46.
- Accuracy, 56, 99, 124, 125, 189, 207, 219, 264, 293.
 - and speed, 38, 39, 381.
- Achievement, 29, 62, 89. *See also* Success.
 - and democracy, 25.
- Acids, 67.
- Acting, 249.
- Addition, 294.
- Addresses, public, 244-247.
- Ade, George, 250.
- Adjectives and adverbs, 237.
- Adjustment, 215.
- Adolescents, 68, 93, 229.
- Adverbs and adjectives, 237.
- Advertisements, 233, 278.
 - in mathematics, 301.
- Æsthetics, 306.
- Age, 262.
- Agriculture, 165, 312 ff.
- Aims, 91.
- Air, 306.
 - circulation, 80, 81.
- Alderman, L. R., 226, 382.
- Alertness, 56, 65.
- Algebra :
 - amount of time spent studying, 165.
 - and girls, 287 ff.
 - examinations in, 298, 299.
 - methods of studying, 291, 293, 300.
 - pupils' ability in, 40-48.
 - rate and amount of work in, 36-38.
 - stated conferences in, 99.
 - supervised study in, 134 ff., 302, 303.
 - value of, 289.
- All-round pupil, 58.
- Alternate daily periods, 96, 158, 159.
- Ambiguity, 238.
- Ambition, 87, 306.
- Amusements, 10, 11, 26, 278.
- Anabolism, 64 ff.
- Analysis, 178, 218, 223, 224, 225, 240, 261, 302.
- Analytics, 291.
- Apparatus, 125.
- Appearance of pupil, 88, 89.
- Appendix, use of, 122.
- Appetite, 70.
- Apples, 69.
 - apple butter, 70.
- Application, 21, 88, 123, 205, 206, 215, 218-220, 225, 297.
- Archæology, 229.
- Argumentation, 229, 233-235, 248, 249.
- Arithmetic, 104, 105, 289.
- Art, 56, 58, 381.
 - aim of studying, 373 ff.
 - and composition, 232.
 - and history, 262.
 - pupil's liking for, 373.
 - supervising study of, 372-382.
- Artistic reading, 249, 250.
- Assembly hall, 96-98.
 - criticism of, 97, 98.
 - study program in, 117-120.
- Assignments, 86, 93, 129, 130, 143-153, 168, 193.
 - abstract, 147.
 - amount of time for, 147 ff.
 - attractive, 143.
 - class, 145.
 - coöperative, VIII, 129, 143, 278-286.
 - definite, 131, 143, 144, 146, 147, 149, 177.
 - general, 147.
 - hurried, 18, 23.
 - hygienic, 93.
 - indefinite, 23.
 - individual, 143, 145, 147.
 - informal, 148.
 - intensive, 20.

- Assignments, in civics, 278-286.
 in debates, 248.
 in history, 262 ff., 274, 275.
 in mathematics, 292 ff., 302, 303.
 in supervised study, 169-172 ff.
 kinds, 145 ff.
 long, 24.
 making, 144.
 memorizing, 211.
 mental processes in, 145 fn.
 Merriam, J. L., on, 148, 149.
 motivation in, 23, 147.
 omitting, 99.
 page, 20, 145 ff.
 paragraph, 145 ff.
 problem, 145 ff., 258.
 reading first time, 122, 125.
 reasonable, 84.
 remembering, 149, 293.
 standing, 236.
 study after, 118.
 study before, 148.
 testing, 156.
 time for, 131, 148.
 topic, 145 ff., 281-286.
 understanding, 122, 152, 178, 206.
 university type of, 177.
 Association, 57, 124, 125, 202, 207, 209, 218, 259, 261, 267.
 Astronomy, 301.
 Athletics, 42, 56, 73, 110, 234, 278.
 Atmosphere, 313.
 Attention, 56, 57, 60, 83, 84, 92, 97, 120, 125, 170.
 Attitude in studying, 60.
 Atwater. *See* Vost and Atwater.
 Auditory images, 46, 49, 50, 61, 114.
 Authority, 25, 101.
 Authors, 178, 196, 203.
 Automobiles, 73.
 Autumn, moods caused by, 86.
 Ayres, L. P., 14, 34.
 Bacon, Francis, 69.
 Bachelor apartments, 4.
 Bachelors, 4.
 Bagley, W. C. 58.
 Bainbridge, High School, Richmond, Virginia, 296, 297, 399 ff.
 Ballou, 229.
 Bananas, 70.
 Bands, 381.
 Banquets, 244.
 Baseball, 73, 74, 92.
 Baseburners, 79.
 Basketball, 73, 89.
 Batavia, New York, plan of supervised study, 128, 129.
 Beans, 66, 70.
 Beauty, civic, 277 ff.
 Bedchamber, 72, 73.
 Beef roast, 69.
 hamburg steak, 70.
 salt, 69.
 Beethoven, 199.
 Bell, Alexander, 208.
 Bell and Lancaster, 13.
 Bible students, 168.
 Bicycling, 74, 92.
 Biography, study of, 89, 243, 301.
 Blackboards, 78.
 and grammar, 224.
 use of, in supervised study, 111.
 Blackduck, Minnesota, 216 ff.
 Blood, circulation, 64, 79.
 pressure, 67.
 Bloomington, Indiana, 386 ff.
 Blue, Hal G., 123-125.
 Boccaccio, 90.
 Bonser, Frederick, 213.
 Book, Wm., 68, 219.
 Bookkeeping, 97.
 Book, loose-leaf, 101.
 Book reviews, 169.
 Books, *See* Textbooks.
 closing, in studying, 194.
 dependence on, 51.
 in history, 265-267.
 modern, 240.
 reference, 116, 142, 170, 174-177.
 use of, 19, 20, 118, 122, 125, 171, 194.
 "Born short," 42, 43.
 Boston, Massachusetts, 70.
 Boys, and oral composition, 238.
 fatigue of, 93.
 tall, 88, 89. *See also* Individual differences.
 Brace outline, 182, 183, 224.
 Braces as notice signs, 167.

- Brain, 68.
 cells, 67.
 food, 66.
 Bread, 66, 69, 70.
 Breakfast, 69.
 studying before, 162.
 Breslich, E. R., quoted on assignment, 143-144, 388.
 Bridges, 278.
 Briefs, 180, 234-235, 248.
 Brilliant pupil, 58, 150, 267.
 Bristol, Connecticut, 380.
 Brooklyn, New York, 291.
 Brooks, Phillips, 178.
 Brown, J. C., and Minnick, J. A., 221, 253.
 Brown, J. Stanley, 27.
 quoted on "delayed group" plan, 116.
 quoted on double period plan, 133-140, 385, 386.
 Browning, 366.
 Burbank, Luther, 308.
 Byron, Lord, 90.
- Cabbage, 1.
 Cafeteria, 68.
 Cairo, Illinois, 389, 390.
 Calcium, 67.
 Calculus, 291.
 Calory values, 67, 70.
 Cambridge, Massachusetts, 32.
 Campaign, 262.
 Canals, 141.
 Canoeing, 73.
 Capacity, native, 14, 15, 21, 22, 31, 33.
 analyzed, 56, 57, 61, 96.
 in mathematics, 288. *See also* Individual abilities.
 Carbohydrates, 66.
 Carbon in food, 67.
 Cards, public speaking notes, 246; recording references, 101, 185-188.
 Carelessness, 55, 58, 185, 295.
 Carlyle, 64.
 Carpet in bedchamber, 73.
 Case, 237.
 Causes in history, 266, 270.
 Central High School, Newark, New Jersey, 298 ff.
 Century, 262.
 Cereals, 66, 67.
- Cerebellum, 68.
 Chance variations, 33.
 Chancellor, William, on image types, 50-52, 54.
 Chandler, Supt. J. A. C., 159.
 Channing, Edward, 256.
 Character. *See* Dispositions.
 Charities, 277.
 Charlottenburg, Germany, 32.
 Cheating, 205, 295.
 Checks as notice signs, 167.
 Cheerfulness, 84, 86, 87, 89, 250.
 Cheese, 66.
 Chemistry, 165, 305.
 Chicago, University of :
 assignments in high school, 143, 144.
 conference on German, 321 ff.
 mathematics in, 300, 301, 388.
 plan of directing study, 121-123.
 sleep habits of President Harper, 72.
 Children, independence of, 7.
 indigent, 70.
 Chittenden, R. H., 66.
 Chromatin, 67.
 Church, H. O., 353.
 Church life, 278.
 Churchman, P. N., 331.
 Cicero, Illinois, 353.
 Cigarettes, 65.
 Cigars, 65.
 Citizenship, 276 ff., 290.
 City life, 4, 5.
 Civics :
 and themes, 229, 232.
 assignments in, 147, 278-281.
 civic beauty, 277 ff.
 current topics, 281-286.
 methods of studying, 277-286.
 problems in, 55.
 pupil's ability in, 40 ff.
 supervising study of, 276-286.
 Civilization, 2, 214.
 Clam chowder, 70.
 Clark College, 331.
 Class instruction :
 aided by conferences, 103.
 criticism of, 31 ff., 51.
 needs of, 32.
 psychology of, 98.
 unassigned teacher, 104, 128.

- Class instruction, *vs.* individual instruction, 14, 18, 19, 21, 31.
- Class management, 13, 14, 34, 49, 52.
and supervised study, 22, 58, 59, 128-160.
in mathematics, 293-297, 302, 303.
- Classroom, as study hall, 97.
- Clearness, 167, 207, 232.
- Climate and studying, 90, 91, 141.
- Clippings, 301.
- Club life, 279.
- Clubs, history, 263.
mathematics, 301.
- Cocoa, 70.
- Coffee, 65, 314.
- Coherence, 238.
- Coleridge, 64.
- Colloquialism, 237.
- Colors, memory for, 50.
- Columbia, Missouri, plan of supervised study, 129-133.
- Columbia, South Carolina, 310.
- Columbia University, 383, 384.
- Columbus, 208.
- Colvin, S. S., on mental images, 49, 52, 53.
- Commencement day, 262.
- Common sense, 95.
- Communication, 277 ff.
- Community as study hall, 277.
- Comparison, 118.
in history, 264.
parallel outline in, 182, 193, 264.
- Complacent pupil, 58.
- Composition, oral, 238-251.
- Composition, written. *See also* Themes.
cheating in, 295.
correcting papers, 26, 27, 139, 236, 293.
forms of, 229 ff.
reports of, 60.
supervising study of, 139, 221-238, 251.
- Concentration, 20, 56, 74, 84, 91, 92, 118, 120, 122, 125.
- Concepts, in history, 261.
in studying, 29, 85.
- Conclusions, 180.
- Conducted study period, 99.
- Conference book, 99, 101, 102, 125.
- Conference period, 99.
- Conferences, 86, 96, 98-103.
by appointment, 99, 100.
stated, 98, 99.
- Conferences, technic of, 100-103.
- Confidence, 58, 85, 86, 87, 219.
- Contentiousness, 92.
- Contrast, 118, 193, 231.
- Control, 68.
- Conversation, 100, 239-243, 335, 336.
- Coöperativeness, 89.
- Copying notes, 201-203.
- Cornell University, 71.
- Cornell, W. S., quoted on school lunches, 70.
- Correcting papers, 26, 27, 139, 236, 293.
- Correlations, 40-44, 53, 206, 208, 262, 271, 289, 300, 301, 302, 318.
- Cost of living, 4.
- Cotton, 141.
- Coulter, J. G., quoted on science, 312-314.
- Courage, 89, 94.
- Course, 16.
- Courtis, S. A., 14.
- Crain, C. M. *See* Frailey and Crain.
- Cram, R. A., on art, 373 ff.
- Cramming, 204, 205.
- Crawfordsville, Indiana, 340.
- Credit, 16, 288, 291.
- Crossbars, 73.
- Crosses as notice signs, 167.
- Currents, 141.
- Current topics, 281-286.
- Curriculum, 16, 34, 49, 289, 290.
- Daily extra period, plan of supervised study, 156-158.
- Daily work, report of, 60.
- Dancing, 92.
- Darwin, Charles, 199, 308, 348.
- Dates as food, 69, 70.
- Dates in history, 254 ff., 261.
- Day tickets, 310.
- Dealey, 4.
- Dearborn, W., on well-being, 67-69.
- Debating, 89, 247-249.
- Decade, 262.
- Deceitful pupil, 58.
- Deduction, 25.
- Deformity, 89.
- DeKalb, Illinois, 99, 120, 121, 153, 163.
- "Delayed group" plan of supervised study, 115, 116.
- Democracy, and achievement, 25.
and history, 258.

- Democracy, and individual pupil, 32.
 and public speaking, 243.
 and social efficiency, 215.
 as a stimulus, 89, 93.
 Demonstration, 289.
 Denver, Colorado, 32.
 Depew, Chauncey, 244.
 Deportment, 60.
 Descriptive writing, 229, 231, 232, 289.
 Desk, pupil's, 75.
 Details, avoiding too many, 179, 180.
 Detroit, Michigan, 59, 60.
 Dewey, decimal classification, 175 ff.
 Dewey, John, 146, 214.
 Diagrams, 125, 183, 223, 224, 233.
 Dickens, Charles, 225.
 Diction, 237.
 Dictionary, use of, 118, 120, 139, 166, 172, 193, 259, 262, 265, 275.
 Diet. *See* Eating.
 Difficulties, analyzing, 109, 111.
 anticipated and prevented, 115, 116.
 dealing with, in conferences, 101, 103.
 example of, in geometry, 109, 110.
 in history, 271.
 in mathematics, 293.
 recording, 112, 113, 114.
 Digestion, 64, 71.
 Dignity, 101.
 Discipline, 119.
 Discouragement, 85.
 Discoveries and inventions, 315-317.
 Discussion, 239-243, 259.
 Disease, 64.
 Dishonesty, 295.
 Dispositions, individual, 34, 54-61.
 Distractions, 21, 26, 82, 91-93, 98, 115, 120, 125, 166.
 Divided period plan of supervised study, 84, 96, 127, 128-133, 153, 157, 158, 160.
 Batavia, New York, plan, 128, 129.
 Columbia, Missouri, plan, 129-133, 148, 149.
 schedule of, at Rochester, New York, 154.
 technic of, 140-153.
 Doing and learning, 218-220.
 Domestic science, 165, 185.
 curriculum, 65, 66, 305.
 sewing, 110.
 supervising study of, 134, 244, 262, 291.
 Domestic science, textiles, 110.
 Don Quixote, 349.
 Double period in Joliet, Illinois, 133-156.
 Dowden, 365.
 Downman, W., quoted on direction of study, 123-125.
 Drama, 362, 383.
 Dramatic work in language, 336 ff.
 Dress, pupils', 88, 381.
 Drill, 103, 177, 223, 318.
 Driving, 74.
 Drowsiness, 69, 81.
 Duke, D. C., quoted on sleep, 72.
 Dumb-bells, 73.
 Earhart, Lida B., 141, 213.
 Earning money, 7.
 Earth, 306.
 Eating, 19, 64. *See also* Food.
 amount and quality of, 66-70.
 time of, 70, 71.
 Economics, 165.
 Edison, 62, 64, 214, 308.
 quoted on sleep, 71, 72.
 Education :
 departments of, in universities, 95, 106, 115.
 false conceptions of, 25, 205.
 formal or organized, 87, 277 ff.
 meaning of, 215.
 primitive, 1.
 social, 2.
 Educational values, 25, 27.
 of history, 257 ff.
 of mathematics, 289 ff.
 Efficiency, 67.
 Effort :
 abuse of, 17, 63.
 conditions of, 63.
 directed, 17, 18.
 disturbed by sex-instinct, 87, 88.
 reporting, 60.
 rewarding, 90, 130, 157, 203.
 source of, 64.
 Eggs, 66, 67, 69.
 Electricity, 306.
 Electric fans, 80.
 Electric lighting, 78.
 Elementary school :
 course in history, 254 ff.

- Elementary school, eighth grade in, 116.
 English in, 223.
 unassigned teacher in, 104, 105.
- Elhuff, Lewis, on science, 314, 315.
- Elimination, 34, 88.
- Elizabeth, New Jersey, 32.
- Embarrassment, 89.
- Emotion, 46, 83, 85-91, 249.
- Encouragement, 90, 138.
- Encyclopedias, 166, 172 ff.
- Endurance, 56, 63, 65.
- Energy, 63, 65, 66, 67, 68.
 physical, 306, 312 ff.
 wasteful, 111, 146.
- England, heating of schools in, 79.
- English. *See also* Composition, correct-
 ing papers, literature, themes.
 in study hall, 97.
 methods of studying, 125, 169, 172, 193,
 196, 215 ff.
 notebook work in, 184.
 pupils' ability in, 40-44, 46-48.
 stated conference in, 99.
 supervising study of, 134, 139, 155, 385.
 time spent in studying, 165.
- Enthusiasm, 27, 84, 240.
- Environment, 33, 91, 115.
- Epoch, 262.
- Equations, 296, 297.
- Erosion, 141.
- Essays, 227.
- Euphony, 238.
- Euphoria, 68, 243.
- European war, 214, 219, 257.
- "Evangeline," study of, 368.
- Examinations:
 in mathematics, 297 ff.
 mental types in, 50, 151.
 oral, 51.
 preparing for, 184, 203-206.
 variety in, 169.
- Examinations and reviews, 219.
- Exceptional pupils, 48, 54.
- Experience, 62, 147, 208.
- Experiments, 308, 309, 311.
- Expertness, 240.
- Explaining new lessons, 23, 144, 184, 295.
- Exposition, 51, 184.
 forms of, in composition, 229, 232, 233.
 in history, 258.
- Extemporaneous speaking, 248.
- Eyesight, 205. *See also* Light.
- Fabre, J. H., 349.
- Facial expression, 249.
- Failures, 85, 86, 184.
- Faintness, 81.
- Fair-mindedness, 87.
- Faith, 62.
- Family:
 architectural conditions of, 5-7.
 biological conditions of, 4, 5.
 colonial and modern, 3.
 independence of children, 7.
 industrial conditions, 7, 8.
 making necessities of life, 7.
 social conditions of, 8, 10, 55.
 traits, 55.
- Fatigue, 65, 92, 93.
- Fat people, 67.
- Fat-producing foods, 66, 67.
- Feeling, 262.
- Feeling tone, 85-91.
- Fiction. *See* Novels.
- Fielding, H., diet of, 69.
- Figs, 69.
- Figures of speech, 238, 366.
- Filing, 186 ff., 195.
- Filing cases, 186 ff.
- Fish, 66, 69.
- Flannigan, M. L., 39.
- Fletcher, Horace, 69, 70.
- Flux, philosophy of, 33.
- Fly-leaves, use of, 171, 195.
- Food, 64-70, 314.
- Food chemistry, 66, 314.
- Foothall, 73, 89, 234.
- Footnotes, 122, 193.
- Ford, Simeon, 244.
- Formal discipline, 226, 289, 318, 321.
- Form of discourse, 238.
- Fowl as food, 69.
- Frailey, L. E., and Crain, C. M., investi-
 gation of pupils' abilities in different
 subjects, 39-48.
- Franklin, Benjamin, 62.
- Frederick the Great, 69, 225.
- French, supervising the study of, 134, 137,
 138, 318 ff., 335, 336, 341 ff.
- Friction, 62, 63.

- Fruits, 66, 67, 69.
- Galileo, 62.
- Gammans, H. W., on grammar, 223, 225, 236.
- Geography, 105, 141, 165, 208, 259.
- Geometry :
- attitude toward, 287 ff.
 - difficulties in, 109, 110, 295.
 - examinations in, 299.
 - groups in, 294.
 - memorizing in, 295.
 - method of studying, 213, 300.
 - pupils' ability in, 40-48, 91.
 - supervising study of, 134, 138, 155, 303.
 - value of, 289.
- German, 91.
- amount of time spent studying, 165.
 - courses in, 322-324.
 - stated conference in, 99.
 - supervising study of, 134, 137, 138, 318 ff., 341 ff.
- Gestures, 246, 249.
- Giles, F. M., quoted on directions of study, 120, 121.
- on pupils' habits of study 163, 172, 193, 213, 258.
 - on weekly supervision of study, 153, 154, 156.
- Girls. *See also* Individual differences.
- and algebra, 287, 291.
 - and oral composition, 239.
 - dress of, 88.
 - fatigue of, 93.
- Goal idea, 199.
- Goethe, 321.
- Golf, 73.
- Glee clubs, 381.
- Grading. *See* Marking.
- Graham wafers, 70.
- Grammar, 325.
- method of studying, 183, 222-226, 321, 325-330.
 - unassigned teacher in, 105.
- Gravity system, 81.
- Gray days, moods caused by, 86.
- Greek, 319.
- Grit, 62, 63, 89.
- Groups :
- according to mental types, 52.
 - Groups, adjustment of, 59.
 - assignments according to, 149.
 - coöperation in, 61.
 - delayed plan, 116.
 - in mathematics, 294 ff.
 - study coaching, 111.
 - supervising study of, 97, 151 ff.
- Gurlitt method, 325-327.
- Gymnasiums, 73, 135.
- Gymnastics, 74.
- Habit, 55, 56, 60.
- of speech, 222.
 - of study, 120-126.
 - of writing, 227.
- Hamburg steak, 70.
- Hamilton, Miss Lucy, 128.
- "Harbor, The," 359.
- Hardship, 62.
- Harper, habits of sleep, 72.
- Harris, L. H., 320.
- Hart, Bushnell, 256, 257, 258.
- "Harvester, The," 359.
- Haste, 295.
- Hastings, Nebraska, 104.
- Haughty pupil, 58.
- Hawthorne, 225.
- Hayward, F., 360.
- Headings, 179, 181.
- Health, 19, 55, 62, 64-74.
- meaning of, 64, 65, 205.
 - study of, 277, 280.
- Heart rate, 67.
- Heat :
- amount of, for studying, 79.
 - foods producing, 66.
 - kinds of heating, 79, 80.
 - in science, 313 ff.
 - summer, 90.
- Heck, W. H., 164.
- Hegel, 349.
- Henry VIII, diet of, 69.
- Heroism, 89.
- High school, 29, 55, 70, 106, 220.
- Hill, 159.
- Hillegas, M. B., 229.
- History, 24, 360.
- American, 40, 41, 105, 253, 265, 268-270.
 - amount of time studying, 165.
 - ancient, 272-275.

- History, clubs, 263.
 correlations, 208.
 in study hall, 97.
 mental processes in studying, 261 ff.
 methods of studying, 84, 85, 86, 121, 125,
 132, 135 ff., 172, 182, 252-275.
 notebooks in, 184, 191.
 supervised study of, 155, 252-275.
 value of, 257 ff.
- Holmes, W. H., fn. 32.
 quoted on unassigned teacher, 104, 105.
 on assignment, fn. 145.
- Holyoke, Massachusetts, 223.
- Home life, 3-10, 73, 93.
- Home study. *See* Studying at home.
- Hope, 63.
- Horseback riding, 73.
- Hot-air furnace, 79, 80.
- Hot-water heating, 80.
- "House of Life" by Rossetti, 210.
- Howells, Dean, 349.
- Hugo, Victor, 225.
- Humanity, 71.
- Humidity, 67, 81.
- Hundred Years' War, 266.
- Huneker, James, 225.
- Hunting, 73.
- Huxley, 214.
- Hydrogen in food, 67.
- Hysteria, 92.
- Illinois, University of, investigation by
 School of Education of pupils' abilities
 in different subjects, 39-48.
 system of vocational guidance, 53-56.
- Illustrations, 122, 123, 125, 145, 183, 189,
 197, 199, 201, 206, 233.
- Image types, 34, 45, 46, 49-54.
- Imagery, 238.
 in poetry, 365, 366.
- Imagination, 57, 259, 262.
- Imitation, 222.
- Imitators, 29.
- Impatience, 295.
- Important matter :
 checking and underscoring, 166-168, 169.
 organizing, 118, 179 ff., 193, 248.
 selecting, 21, 120, 122, 124, 125, 146, 155,
 258, 259, 261, 270.
- Impression, first, 207, 219.
- Impulsiveness, 55, 87.
- Incentives, 19, 85, 88.
- Indentations, 179 ff., 197.
- Index, using, 122.
 making, 192.
- Indifference, 84, 87, 93.
- Indigent children, 70.
- Individual ability. *See* Individual differences.
- Individual differences, 13-15, 22, 31-34,
 38r.
 according to image types, 34, 45, 46, 49-
 54.
 according to sex, 45-49, 61.
 according to subjects, 40-44.
 schemes of tabulating, 55-61.
- Individual dispositions, 34, 54-61.
- Individual instruction :
 in Batavia, New York, 128, 129.
 in study coaching, 112.
 present interest in, 32.
- Individuality, 229.
- Industrious habits, 56, 58, 62.
- Industry, and composition, 229.
 and language, 318.
 at home, 7, 8.
 modern, 8, 252.
- Ingenuity, 63.
- Ink, 167, 192.
 red, 198, 227, 236.
- Initiative, 29, 95.
- Inserted leaves, 171, 185, 192.
- Insight, 87.
- Instinct, sex, 87.
 self-preservative and social, 88-90, 199.
 social, 229.
- Institutes, conferences at, 98.
- Instruction, individual. *See also* Super-
 vised study, 32, 112, 128, 129.
 unit of, 16.
- Interest, 20, 22, 55, 56, 63, 84, 92, 129, 136,
 199, 228, 229, 252 ff., 277.
- Interlacing outline, 183, 184.
- Intonation, 249.
- Introductions, 170, 180.
- Inventions and discoveries, 315-317.
- Iron in food, 67.
- Irritability, 92.
- Italian language, 91.
- Ivanhoe, 171.

- Jackson, Michigan, 103.
 James, Henry, 225.
 James, William, 83.
 Jelly, currant, 69.
 Joliet, Illinois :
 delayed group plan, 115, 116.
 double period, 133-140, 302, 303, 328-330, 385.
 no home study, 26, 136.
 prevention of repeaters, 28, 136.
 Johnson, N.C., quoted on distribution of distractions, 92.
 on pupils' habits of study, 161-163, 258 ff.
 on recreation and study, 74.
 Johnston, Charles Hughes, 16, fn. 18, 383, 384.
 Johnston, W. Dawson, 263.
 Jonson, Ben, diet of, 69.
 Josephine of France, 72.
 Joynes and Meissner, 325.
 Judd, C. H., fn. 21.
 on history, 254.
 on mathematics, 295, 296.
 quoted on rate and amount of work, 35-38.
 Judgment, 95.
 Junction City, Kansas, 379.
 Junior high school, 12, 34.
 daily schedule of supervised study, 154.
 in Richmond, Virginia, 159, 399 ff.
 vocational guidance, 55, 56.
 Justice, 89.

 Kansas City, Kansas, 28.
 Kant, 214.
 Katabolism, 64 ff.
 Keeping pupils in after school, 103.
 Kennedy, detective, 360.
 Kennedy, John, 103.
 Kinæsthetic, images, 50, 52.
 sensations, 68.
 Kingsley outlines, 333 ff.
 Knowledge, 85, 86, 124, 205, 208, 228, 239, 240, 251.

 Laboratory, 125.
 in civics, 278 ff.
 in science, 308-311.
 method of, in studying, 130, 133, 182, 185.

 Lacrosse, 73.
 "Lady Baltimore," 359.
 "Lady of the Lake," 171.
 Lamp, student, 76.
 Lancaster, 351, 373.
 Lancaster and Bell, 13.
 Language, 24. *See also* Latin.
 aim of, 318-320.
 French, 134, 137, 138, 318 ff., 335, 336, 341 ff.
 German, 134, 137, 138, 318 ff., 322-324.
 method of studying, 172.
 pupils' ability in, 46-48, 228.
 supervising study of, 134, 318 ff., 325-347.
 translation, 122 ff., 132, 219.
 Laska, 250.
 Lassitude, 81.
 Latin :
 amount of time in studying, 165.
 and English, 320.
 dislike of, 253.
 rate and amount of work in, 35, 36.
 pupils' ability in, 40, 41, 48, 340.
 stated conference in, 99.
 supervising study of, 134, 137, 318 ff., 332, 333-335, 341 ff.
 Law cases, 224.
 Laziness, 19, 55, 56.
 Leadership, 27, 56, 205, 215.
 Learning and doing, 218-220.
 capacity for, 57.
 not easy, 63.
 Leisure, 119.
 Leland Stanford University, 335.
 Le Mars, Iowa, 32.
 Lentils, 66.
 Leonardo da Vinci, diet of, 69, 211.
 Lequoc, 360.
 Lesson. *See* Assignment; Recitation.
 Lesson plans, 141.
 hook for, 141-143.
 Lesson types, 141, 142.
 Letter writing, 230.
 Lewis Institute, Chicago, Illinois, 291.
 Library, ignorance of students in, 30.
 in history, 262.
 in mathematics, 300, 301.
 method of studying with, 133, 135 ff., 174-177.
 Life, 95, 170, 305.

- Life, modern, 262.
 study of, 277 ff.
 Liggett High School. *See* Detroit.
 Light, 19.
 acetylene, 78.
 amount of, 77-79.
 electric, 77-79.
 gasoline, 78, 166, 307, 315.
 quality of, 76.
 rules of lighting, 75-79.
 student lamp, 76.
 sufficient, 77.
 Lincoln, Nebraska, 291.
 Lipoids, 67.
 Listening, 241.
 Literature, 91, 92, 360.
 and composition, 229.
 and grammar, 225.
 correlations with, 208.
 drama, 362-363.
 essay, 360, 361.
 interest in, 199.
 method of studying, 193, 196, 208, 220.
 novels, 358-360.
 pupils' preferences, 351, 352.
 supervising study of, 132, 155, 156, 348-371.
 value of, 348-351.
 Living expenses, 279.
 Living room, 164.
 Lobsein, M., 45.
 Locke, John, diet of, 69.
 Locution, 237.
 Lodge, G., 331.
 Logical memory, 211.
 Loiset, 211.
 Loneliness, 86, 87.
 Loose-leaf notebook, 185, 190, 196, 309 ff.
 Lounsbury, T. R., quoted on written composition, 235.
 Love, 306.
 among pupils, 87.
 Loveland, I. M., quoted on daily extra period, 156-158, 389.
 Lunch box, 68.
 Lupin, 360.
 Lutz, Miss Caroline, 173.
 Lyell, Charles, 349.
 McDougall, William, 68.
 McMurry, Charles, 141, 256.
 McMurry, Frank, 133, 146.
 Mabie, H. W., 360, 361.
 Macaroni, 70.
 Macaulay, diet of, 69, 349.
 "Macbeth," 155.
 Maeterlinck, M., 250, 349.
 Magazines, 123, 125, 142, 166, 172 ff., 224, 240.
 Magnetism, 306.
 Maine, coast of, 87.
 Manila covers, 198.
 Manila folders, 186 ff.
 Mannheim, Germany, 32.
 Manual training, 91.
 and history, 262.
 pupils' dislike of, 253.
 supervising study of, 134, 185, 186.
 Maps, 123, 193, 259, 260, 270, 367.
 Marconi, 308.
 Margin, use of, 170, 171, 180, 181, 185, 192, 213.
 Marking, 18, 24, 26, 90.
 basis of, 101, 102, 130, 151, 152, 160, 168, 171, 205.
 Marriage, 4.
 Mathematics. *See also* Algebra.
 amount of time in studying, 165.
 arithmetic, geometry, 24, 38, 46-48, 86, 92, 121, 122.
 assignments in, 143.
 difficulties in, 293, 294.
 groups in, 150.
 method of studying, 213, 219.
 notebooks in, 184, 293.
 supervising study of, 155, 253, 287-304.
 value of, 289 ff.
 Measurements in education, 24, 53, 95, 115.
 Meat, 66, 69, 70.
 Mechanical drawing, 97.
 Mediocrity, 54.
 Memorizing, 14, 118, 124, 138, 193, 200, 201, 205, 218, 220.
 and artistic reading, 249.
 in debates, 248.
 in geometry, 289.
 in history, 264, 271.
 methods of, 207-213, 331-333.

- Memorizing, poetry, 367 ff.
vocabulary, 331-333.
- Memory, according to sex, 45, 46.
images, 49-54.
kinds, 57, 210, 211.
- Mental hygiene, 21.
- Mental testing, 115.
- Mental traits, 55, 56.
- Mental types. *See also* Image types, 34,
97, 114, 115.
- Merriam, J. L., quoted on supervised
study in Columbia, Maryland, 129-
133.
on studying history, 272-275.
"Evangeline," 368 ff.
- Metabolism, 64, 68.
- Method, general, 95, 347.
natural, 325.
psychological, 325.
traditional, in language, 325.
- Meumann, E., 52.
- Michael Angelo, 69, 214.
- Migration, 277.
- Milk, 66, 70.
- Mill, J. S., 349.
- Miller, I. E., 214.
- Millikin, James, University, 173.
- Milton, 64, 214.
- Mind wandering, 19, 21, 56, 84, 170.
- Mineral matter in eating, 67.
- Mining, 141.
- Minnesota Educational Association, 254.
- Minnick, J. A., investigation of mathemat-
ical abilities of boys and girls, 46-48,
387 ff.
on English, 221, 253.
- Mistakes in composition, 237, 238.
- Mnemonics, 211, 212, 260.
- Mohammed, diet of, 69.
- Monitors, 13, 97.
- Monroe, W. S., quoted on pupils' work in
mathematics, 38, 46.
- Montaigne, 349.
- Monuments in history, 262.
- Moods, 86-88.
- Morals, 280.
- Morbidness, 90.
- Morley, H., 349.
- Morose pupil, 58.
- Motivation, 228.
- Motor images, 46, 50, 52, 61, 114.
- Movement, 262.
- Moving pictures, 10.
- Mühlbach, Louisa, 225.
- Multiple type image theory, 53, 54.
- Muscle imagery. *See* Kinæsthetic images.
- Muscular adroitness, 67.
- Museum, 262.
- Music, ability in, 51.
as recreation, 74.
adjusting key to weather, 91, 229.
and history, 262.
credit for, 376-380.
meaning of, 381.
supervising study of, 375 ff.
- Names, memory for, 50.
- Napoleon, sleep habits of, 72.
- Narcotics, 65.
- Narrative writing, 229-231.
- Neatness, 167, 293, 381.
- N.B., notice sign, 168, 298.
- Nerves, afferent, 68.
- Nervous exhaustion, 92.
- Nervousness, 81.
- Nervous system, 64.
central, 68.
peripheral, 68.
- Netschajeff, 45.
- Neurones, 68.
- Newark, New Jersey, 129, 384.
- News items, 224.
- Newspaper, 233, 236, 240, 263, 279, 360.
editorials, 224.
reporting, mental type of, 51.
- Newton, Massachusetts, 104, 105.
- Nitrogen in food, 67.
- Noise, 91.
- Norfolk, Virginia, 158.
- Normal schools, 95, 104, 106, 115, 292.
- North Platte, Nebraska, 376.
- Notation, 295.
- Notebooks, 166, 184, 220.
appearance of, 190-192, 293.
cards, 185 ff.
copying in, 201-203.
kinds, 185-190.
in literature, 356, 357.
in science, 309 ff.
manila folders, 185 ff.

- Note-taking, 118, 122, 188-192, 193, 194.
 in history, 270.
 in literature, 356, 357.
 in textbook, 133.
 preparing for, in public speaking, 246, 247.
 too much, 184, 201, 271.
- Notice signs, 167 ff., 295.
- Novels, studying, 358-360.
 modern, 224, 243.
- Numbers, memory for, 50.
- Nutrition. *See* Eating; Food.
- Nuts, 66.
- Oakland City, Indiana, 265, fn.
- Oats, as food, 66.
- Objects, 46, 50, 52.
- Oblique outlines, 181.
- Observation in science, 311.
- Obs. as notice sign, 168.
- Occasional supervised study, 96, 159.
- Occupations, 55.
- Officiousness, 101.
- Oils, as food, 66.
- Olfactory images, 52.
- Opera, Italian, 90.
- Opinion, 25, 248.
- Opportunity, 89.
- Oranges, 69.
- Orchestra, 381.
- Orderliness, 82, 167, 293, 295.
- Organization, 119, 193, 202, 204, 205, 218, 257, 258, 261, 263.
- Originality, 57, 95, 381.
- Outlines, 24, 118, 156, 166, 171, 189.
 brace, 224.
 in history, 258, 259, 270.
 in literature 356, 357.
 interlacing, 183.
 overlapping, 184.
 paragraph, 178.
 parallel, 163, 179, 264.
 structure of, 179-184.
 use of, 177-184, 189, 193, 194, 205, 220, 232, 234.
 vertical or serial, 181.
- Out-of-door sleeping, 73.
- Oxygen in foods, 67.
- Panama Exposition, indirect lighting at, 76.
- Paper slips, 202, 203.
- Paragraphing, 178, 201, 225.
- Parallel lines as notice signs, 167, 264.
- Parallel outlines, 182, 183.
- Parentheses, 167, 202.
- Parents :
 attitude of, toward pupils' moods, 87.
 coöperation in civic leagues, 285.
 in daily extra period, 157.
 in history clubs, 263.
 reports to, 59, 60.
 supervision, of examination preparations, 204.
- Parker, Gilbert, 250.
- Parker, S. C., 19, fn., 294.
- Participles, 238.
- Parties, attending, 10, 92.
- Pascal, 301, 308.
- Pater, Walter, 349.
- Patron's leagues, 236, 285.
- Peaches, 70.
- Peas, dried, as food, 66.
- Percentage, 296, 297.
- Perception, 110, 296.
- Period, 262.
- Peristalsis, 67.
- Perseverance, 56, 63.
- Peter the Great, diet of, 69.
- Philosophy, 360.
- Phonographs, 71.
- Phosphates, 67.
- Phosphorus in food, 67.
- Physical directors, 74.
- Physicians, 74.
- Physics, 62, 155, 165.
- Physiological conditions of studying, 63, 64, 74, 93.
- Pickwick, 349.
- Pictures, 125.
- Pipe, 65.
- Pittsburgh, Pennsylvania, 99.
- Pius IX, diet of, 69.
- Playgrounds, 278.
- Pleasure, 85.
- Plenum system of ventilation, 81.
- Poe, Edgar Allan, 64.
- Poetry :
 influence of climate on, 90.
 memorizing, 209-211, 367.
 pupils' preference for, 351.
 studying, 363-370.

- Poincaré, H., 54.
 Poole, Ernest, 225.
 Poole's "Index," 177.
 Pope, Alexander, 64.
 Popularity in high school, 89-91.
 Population, 4.
 Pork pie, 69.
 Portland, Oregon, 32.
 Posture, 83, 166.
 Potatoes, 69.
 Pottstown, Pennsylvania, 156-158, 389.
 Practice teaching, 106, 301.
 Praise, 85. *See also* Incentives; Rewards.
 Pratt Institute, Brooklyn, New York, 291.
 Precision, 293.
 Predicate, 237. *See also* Grammar.
 Prefaces, 170.
 Preparation, 60, 118, 119, 123, 296. *See also* Vacant periods; Assignments.
 Pretzels, 70.
 Principal, 97, 98, 100, 101, 108, 116-126.
 Problems :
 assignments of, 145 ff.
 discovery of, 21, 133, 147, 258.
 in chemistry, 310.
 in civics, 278-280.
 in literature, 358, 359, 363, 365.
 in mathematics, 293, 294, 295.
 training pupil to attack, 29, 131, 132, 155.
 Procrastination, 119.
 Program making, 250, 381.
 Program, of studies. *See also* Subject matter.
 curriculum, 16.
 in geometry, 290.
 in science, 295.
 Progress, 33, 34. *See* Pupils' progress.
 Promptness, 55, 60.
 Pronunciation, 52, 318, 330, 331.
 Prose, 209-211.
 Proteins, 66.
 Prunes, 70.
 Psychological conditions of studying, 93 ff.
 Psychology, 21, 27, 86.
 Public speaking, 178, 239, 243-247.
 Pueblo, Colorado, 32, 389.
 Punctuality, 123.
 Punctuation, 225.
- Pupil, high school :
 attitude toward, 23, 27, 87.
 brilliant, 21, 58, 150, 267.
 classification of, 55-61.
 conversation of, 239-243.
 difficulties of, 109, 110, 111, 113, 114, 115.
 directing study of. *See* Supervised study.
 financially poor, 68, 88.
 love affairs, 87.
 moods, 86.
 preparation by, 26, 29, 60, 118, 119, 123, 296.
 progress of, 20, 21, 34, 40-49, 60, 61, 106, 115, 130, 150.
 studying, conditions of, 63, 64, 74, 93 ff.
 studying, methods of, 163-219, 258.
 weak, 99, 155, 157 ff.
- Puzzles, 303.
 Pyle, W. H., quoted on memory, 45, 46.
 on mental record, 57, 58.
- Quadrivium, 25.
 Quartets, 381.
 Queed, 349, 359.
 Questioning and questions, 21, 27, 128, 170, 193, 205.
- Raisins, 69, 70.
 Raphael, diet of, 69.
 Reader's guide, 177.
 Reading. *See also* Literature.
 aloud, 194.
 artistic, 249, 250, 370.
 broader course in, 353-356.
 first, of assignment, 122, 125, 193, 259.
 in history, 262.
 in literature, 353-356, 357.
 in science, 311.
 interest in, 199.
 light for, 77-79.
 method of, 171, 193, 194.
 note-taking, 167, 200-203, 356 ff.
 posture in, 76.
 rapid, 84, 92, 201.
 reference, 21, 118, 170, 200, 259.
 supplementary, 20, 26, 166, 199-203, 209, 218, 220, 357.
- Reasoning. *See* Thinking.

- Reavis, W. C., 117-120.
 Rebuttal, 248.
 Recall, 212, 213.
 Recitation, 19, 20.
 coöperative, 20, 27.
 distractions in, 92, 128, 129, 130-133,
 147, 156, 160.
 early forms of, 31.
 in civics, 147, 278-281.
 in history, 258, 272, 273.
 in mathematics, 303.
 Reciting, *vs.* studying, 126, 132, 156,
 160.
 to some one while studying, 194, 258,
 259.
 Records, school, 106, 107, 113, 114, 152.
 Recreation, 64, 65, 73, 74, 92, 135, 277 ff.
 See also Athletics; Amusements.
 Reeve, W. D., 300 ff.
 Reforms, 229.
 Reference work, 21, 118, 122, 125, 142, 166,
 170, 171, 172-177.
 card for, 186.
 filing, 186 ff., 193, 195, 196, 197.
 numerals in, 168.
 Reflection, 258. *See also* Thinking.
 Reliability, 65.
 Religion and climate, 91.
 Renaissance, 264.
 Repeaters, 136, 137.
 Reports, 21, 166.
 appearance of finished, 198, 199.
 how to make, 195-199.
 ignorance of pupils making, 30.
 in civics, 280.
 in history, 263, 264.
 in literature, 356, 359, 363.
 use of, 86, 220.
 Resentful pupil, 58.
 Responsibility, 55, 58, 62, 65, 131.
 Retardation and retards, 34, 46-49, 99,
 128, 136, 150, 159.
 Reviews, 21, 86, 99, 103, 118, 121, 123,
 125, 158, 168, 178, 181, 184, 205, 219,
 233, 267-270, 297 ff.
 Revision, 251.
 Rewards, 85, 300.
 Rice pudding, 70.
 Richmond, Virginia, 159, 281-286, 296,
 297, 341 ff., 399 ff.
 Rickard, G. E., 54, 172, 193, 259, 265, 391,
 393 ff.
 Ridicule, 88.
 Rivers, 141.
 Roads, 278.
 Rochester, New York, 154.
 Rossetti, 210.
 Rote memory, 211.
 Rousseau, 349.
 Routine, daily, 71, 85, 88.
 Rowing, 73.
 Rugs in bedchamber, 73.
 Running, 74, 92.
 Rural life, 229, 278 ff.
 Russian, 91.
 Rynearson, W. E., 99, 103.
 Sacramento, California, 26.
 Sailing, 73.
 Schiller, 62.
 Scholarship, 119, 288.
 School:
 administration, 12, 25-29.
 buildings, 75-83.
 day, 26, 98, 129.
 feeding, 69, 70.
 hygiene, 93. *See* Studying, conditions of.
 luncheons, 70.
 management, 12, 34, 89.
 reports, 59, 60, 152.
 Science, general *vs.* special, 208, 305,
 306.
 Sciences, 24.
 method of studying, 121, 132, 134, 172,
 182, 184, 193, 208, 229, 290, 307-317.
 pupils' ability in, 46, 48, 86.
 stated conferences in, 99.
 Scotland, 79.
 Scott, Walter, 69, 225.
 Scrapbook in history, 262.
 Secretion, 67.
 Self-confidence, 29.
 Self-pity, 90.
 Sensations, 68.
 Sensitiveness, 92.
 Sensitive pupil, 58.
 Sex, 33, 45-49, 61, 87, 88, 291.
 Shades, window, 76.
Shall and will, 237.
 Shelley, 366.

- Sherlock Holmes, 349, 360.
 Shideler, J. W., Supt., 379.
 Shiftlessness, 55.
 Shrewdness, 95.
 Shurman, President, 71.
 Signs wrong, 294, 295.
 "Silas Marner," 156.
 Sincerity, 94.
 Skating, 73.
 Skill, 68, 85, 227, 259, 289.
 Skinner, M. M., 335.
 Slang, 237.
 Sleep, 19, 26, 64, 65, 71-73.
 bedchamber, 72, 73.
 out of doors, 73.
 sleeping hoods, 73.
 sleeping porches, 73.
 sign of fatigue, 92.
 Sluggishness, 69, 79.
 Smell, images of, 52.
 Smith, C. A., 350, 351.
 Smith, E. E., 159, 268, 281-286, 341 ff., 399 ff.
 Smith, Sydney, 200.
 Smoking, 65.
 Snedden, David, 287 ff.
 Social education, 2, 19, 195.
 Social efficiency, 147, 215.
 Social life, 9-11, 21, 26, 42, 56, 58, 71, 88-90, 92, 110, 114, 115.
 Society, 214.
 Soda fountain, 65.
 Sound, 307.
 Soup, bean, 70.
 Space relations, 110, 295.
 Spanish, 91, 318, 341 ff.
 Spaulding, Supt., 104.
 Speaking:
 after dinner, 243 ff.
 correct, 228.
 "Spectator, The," 349.
 Speed and accuracy, 38, 189, 381.
 Spelling, 238.
 Spinal cord, 68.
 Spinsters, 4.
 St. Louis, Missouri, 32.
 Stage setting, 249.
 Starch, William, 320, 321.
 Start, quick, 83, 122, 151, 155.
 Steam heat, 80.
 Steinmetz, 64.
 Stenography, 165.
 Stimulants, 65, 314.
 Stimuli, 21, 24, 62, 64, 65, 70, 85, 90, 92, 111, 129, 170, 207, 289.
 Strauss, Richard, 90.
 Strayer, G. D., 141.
 Stubborn pupil, 58.
 Student government, 97.
 Studying:
 alone, 123, 163.
 aloud, 213.
 conditions of, 19, 20, 23, 62, 63, 64, 74, 75, 83, 93.
 difficulties in, 24, 27, 63, 109, 111, 115, 116, 271, 293.
 group, 21.
 hindrances to, 19, 21, 90, 92, 98, 115, 120, 125, 166.
 meaning of, 19, 133.
 methods of, 21, 60, 98, 116-126, 132, 161-219, 220, 290.
 moods in, 86-91.
 period, 19, 20, 26, 96, 97, 127, 129, 132, 133, 140-156, 166-219, 260, 273-275.
 program, 21, 96, 117-120, 122, 125, 161, 163.
 recreation and, 73, 74, 92, 135, 277 ff.
 room, 19, 82, 83, 91, 125, 203.
 sleep and, 71-73.
 speed and, 125.
 suggestion of, 82.
 vs. reciting, 126, 132.
 waste in, 18, 30, 63, 111, 155.
 Study at home, 5, 6, 8, 10, 19, 23, 24, 25, 26, 87, 119, 125, 127, 130, 131, 136, 149, 155, 163, 226.
 Study, coach, 27, 103, 104, 110, 115.
 tools, 122, 166 ff., 185, 220.
 Style, 227, 231, 236.
 Subject and predicate, 237. *See* Grammar.
 Subject matter, 2, 27, 30, 287.
 attacking new, 99.
 individualized, 24.
 modern, 11, 15, 133.
 organization of, 140 ff.
 preferences for, 114, 115, 119.
 progress in, 59, 60.
 psychology of, 21, 27.
 pupils' ability in, 39-44.
 teacher and, 97, 115.

- Subject matter, unit of instruction, 140 ff.
 Subtraction, 294.
 Success, 85, 95, 123.
 Suffrage, 208.
 Sugar, 66.
 Summarizing, 166, 168-170, 171, 193, 205, 220, 270.
 Sunshine, 67.
 Superintendents, 95.
 Supervised study, 12, 19, 22.
 alternate daily periods, 158, 159.
 assignments, 143-153.
 cost of, 27, 28, 137.
 daily extra period, 156-158.
 delayed group plan, 115, 116.
 divided period, 128-133.
 double period, 133-140, 140-156.
 general directions in, 116-126, 394-397.
 in Richmond, Virginia, 399 ff.
 meaning of, 13, 15, 20, 22, 24, 25, 29, 93, 145, 161, 164.
 misconceptions about, 17, 23, 97.
 occasional, 127, 159.
 organization of, general, 96-126.
 results of, 383-398.
 schedule of, 131, 148, 154.
 subject, 96, 127-160.
 technic of study taught, 166-219.
 Surveys, 25, 55.
 Swedish, 91.
 Swimming, 73.
 Sympathy, 87, 100, 103, 136.
 Synthesis, 260, 261.

 Tablets in history, 262.
 Tact, 87, 100, 101, 111.
 Tactual images, 46, 52.
 Talking over lessons, 121, 125.
 Tarts, 69.
 Tea, 65.
 Teacher :
 advisors, 55.
 assignments and, 143-153, 156 ff.
 conferences and, 98-103.
 experienced, 95.
 extra, 128, 153.
 first school, 95.
 main duty of, 13, 23, 19, 20, 23, 61, 87, 89, 96, 132.
 mathematics and, 288, 292.
 Teacher, personality of, 26, 109, 136.
 preparation of, 140 ff., 283, 392 ff.
 pupil criticizing, 110.
 recording pupils' difficulties, 113, 114.
 speaking correctly, 223, 226.
 study period, 97, 116, 117, 118, 120, 128, 129, 130, 132, 134, 188.
 training of, 27, 88, 93, 95.
 transfer cards, 106-108.
 unassigned, 103-108, 115, 128.
 Teaching :
 cause of fatigue, 22.
 methods of, 22, 95, 297.
 training of teachers, 115.
 Telephones, 208.
 Temperament. *See* Dispositions.
 Temperature, 19, 81.
 Tennis, 73, 74.
 Tenses, 238.
 Terminology, 16.
 Tesla, 308.
 Testing, mental, 60, 115, 158.
 Textbook, 20, 122, 146, 166-171, 178, 199, 220, 224, 258, 278, 288, 290, 294.
 Theater, 10, 92.
 Themes, 21, 24, 26, 139, 227-229.
 Thinking, 14, 29, 30, 95, 99, 118, 124, 132, 213-218, 220.
 cramming and, 205.
 debating and, 248.
 geometry, 289, 290.
 grammar and, 224.
 history and, 264.
 mathematics and, 302.
 outing and, 179, 181.
 process, 215-218.
 science and, 305, 311.
 style and, 228.
 summarizing, 169.
 Thorndike, E. L., 14, 34.
 on image types, 53, 54.
 quoted on rate and amount of work, 35-38.
 Three-cent meals, 70.
 Timid pupil, 58.
 Tissue-building foods, 66.
 Toast master, 244.
 Tobacco, 65.
 Tomato sauce, 70.
 Topic sentence, 181, 261, 266.

- Topics, 120, 121, 132, 141, 145 ff.
 Tout, W., Supt., 376.
 Track, 73, 74, 89.
 Tradition, 25.
 Translating, 122, 132, 193, 194, 219, 287, 335.
 Transportation, 277 ff.
 Travel, 229.
 Trenton, New Jersey, 384.
 Trigonometry, 291.
 Trivium, 25.
 Trustworthiness, 27, 90, 111.
 Twin Falls, Idaho, 123-125.

 Ugliness, 89.
 Unassigned lesson period, 99, 128.
 Unassigned teacher, 103, 104-108, 115.
 Underscore, 121, 166 ff., 172, 193, 194, 213, 220, 266.
 Understanding, 122, 123, 124, 125, 249.
 Unit, of instruction, 16, 140, 142, 262.
 of recitation, 141, 142.
 of study, 141, 142.
 of subject matter, 30.
 Unity, 238.
 Unpopularity, 70.
 Urbana, Illinois, 39 ff.
 Utilities, 280.

 Vacant periods, 26, 96, 152, 157.
 Vacation school, delayed plan in, 116.
 Vagueness, 296, 309.
 Vail, Theodore N., 208.
 Van Dyke, Henry, 225, 250, 349.
 Variety, 84.
 Vegetables, 66, 67, 69.
 Vegetarianism, 67.
 Venison, 69.
 Ventilation, 73, 79, 80, 81, 125.
 Verbal-acoustic image types, 52.
 Verbal-motor images, 52.
 Verbal-speech-motor images, 52, 53.
 Verbal-tactile images, 52.
 Verbal-visual image types, 52.
 Vertical outlines, 181.
 Vicious pupil, 58.

 Visual images, 46, 49, 50, 52, 61, 110, 114, 294.
 Vocabulary, 122, 211, 212.
 Vocational education, 34, 290.
 Vocational guidance, 55, 56.
 Vocational interests, 56.
 Vocational mathematics, 290.
 Voice, 243.
 Voluntary control, 68.
 Vost and Atwater, 66.
 "V. V.'s Eyes," 359.

 Wagner, Richard, 90.
 Walls, color of, in school, 76.
 Walking, 73, 74.
 Wanderlust, 87.
 Waste in school work, 34, 63, 71, 83, 111.
 Water, 69, 306, 312.
 Waterloo, 225.
 Wayland, 252, 264.
 Wealth, 277 ff.
 Weather, 90, 91, 313.
 Webb, H. E., 297 ff., 384.
 White, E. A., 28.
 Whole method, 209, 211.
 Wiener, William, 129, 384.
 Wilder, Marshall P., 64.
 Will, 85, 121.
Will and shall, 237.
 Williams, Miss Dora, 195, fn.
 Wilson, Woodrow, 349.
 Windows, 73, 75, 125.
 Wine, 69.
 Woodberry, G. E., 364.
 Word types, 52.
 Words, memory for, 50, 51, 52.
 Words, use of, 231.
 Wordsworth, 62, 90, 365, 366.
 Work, 34, 64, 74, 92, 306.
 Worry, 67, 91.
 Writing, 53, 167, 189, 190, 213, 224, 235, 259, 260.

 Yachting, 73.
 Zola, E., 54.

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